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The Nebraska State Medical Journal

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INDEX TO VOLUME VI

Abstracts 64, 291, 292
Acquired Splanchnoptosis, Miles J. Breuer ....
Acute Intestinal Obstruction, A. L. Cooper 347
Acute Manic-Depressive Psychoses and their Early Treatment, W. B. Kern 135
Address to the Nurses of the Graduating Class of the Lincoln Sanitarium, Inez C. Philbrick.....113
Anatomic and Dynamic Principles Involved in Prolapsus Uteri, The, O. D. Johnson 86
Annual Meeting of the Nebraska State Medical Association, The 53rd 206
Basal Metabolism and Its Practical Significance, M. G. Wohl 383
Board of Councilors, Meeting of the 59
Books Received 32, 128, 151, 192, 215, 364
Book Reviews 32, 393
Campaign Against Cancer, The, Francis Carter Wood 261
Cancers of the Skin and Mucous Membrane, A. F. Tyler 274

CASE REPORTS—
  Arthroplasty of the Temporo Maxillary Articulation, S. R. Hopkins 221
  Enlarged Thymus with Autopsy Report, Floyd Clarke & J. Harry Murphy 354
  Hypernephroma with Autopsy Findings, Warren Thompson 355
  Jejunal Ulcer and Abscess, B. R. McGrath 93
  Malignancy in a Centenarian, J. W. Duncan...
  Removal of Open Safety Pin from Eosophagus of an Infant, B. M. Kully....................151
Cause of Failure After Operations for Club Feet, John P. Lord 129
Chronic Prostatitis, W. L. Ross, Jr. 106
Civilian Surgeons Story of the Great War, A, H. Winnett Orr ...144, 176, 201, 250, 285, 319, 350, 391
Clinical Classification of Hyperthyroidism-Exophthalmic Goiter, C. C. Johnson.................. 70
Clinical Diagnosis of Tumors of the Breast, Max Emmert 75
Clinical Syndromes in Serous Meningitis Following Infectious Diseases, G. Alexander Young......312
Dangers in Childbearing, Earl C. Sage.............142
Dextrocardia with Presentation of a Case, Frank X. Rudloff 377
Diagnosis and Treatment of Weak and Flat Feet, The, W. Eugene Wolcott 49
Diagnosis of Pelvic Lesions by the X-Ray, C. G. Moore 223
Diverticula of the Duodenum, A. F. Tyler 41
Dry Milk in Infant Feeding, Earl V. Wiedman....197
Earlier Diagnosis of Cancer of the Breast, The, David C. Hilton 269
Early Diagnosis of Cancer of the Digestive Tract, Geo. W. Covey 267
Early Symptoms and Treatment of Neural Syphilis, J. L. Greene 33
EDITORIAL—
  Alleviating the Scourge of the Ages 155
  American College of Surgeons Meeting 118
  Annual Convention 92, 152
  Bit of Retrospect, A. 155
  Boston Meeting, The 256
  Breach of Confidence, A. 258
  Cancer Week 290, 324
  Cause of the Soldier, The 90
  County School Nurse, The 324
  Curie, Mme. and Radium 187
  Enforced First Stage of Labor 325
  Falling Prices 153
  General Laws and Provision of the Criminal Code of the State of Nebr., Pertaining to Physicians 258
  Goitre 254
  Great Middle Class and Hospital Fees, The...358
  Gymnastics for the Early Aged 219
  Health and Sanitation 293
  Issue, An 58
  Infant Welfare Movement, The 359
  Internal Urinary Antisepsis 28
  Johns Hopkins Dictum, The 358
  Journal, The 27
  Legal Status of Clinical Psychologist Questioned 324
  Lincoln Meeting, The 186
  Looking Forward 27
  Lost Art, The 119
  Medical Examination of School Children and Schoolhouse Ventilation 220
  Nebraska Hospital Statistics 187
  New Duties of the Medico Legal Defense Committee 257
  New Editor and a Little History, A. 186
  Not an Abundant Harvest 188
  Notable Ability Should be Rewarded 360
  Nursing Assistants Needed 358
  Order of Publication of Papers 292
  Papers Presented at Annual Meeting Property of Association 291
  Policy of the Journal 186
  Practitioners Course Given in Omaha 255
  Preparing Manuscript 56
  Prohibition Forever 254
  Proposed Marriage Law 90
  Pyloric Stenosis 152
  Recent Court Decision 325
  Reeducation of the Adult Blind 121
  Richardson County Plan 154
  Sectarian Medicine 122
  Sermonette on Catacoustics 218
  Service to the Community 292
  Sheppard-Towner Bill 91
  Slaughter of the Innocents, The 56
  State Health Insurance 152
  Summer Diarrhea 218
  Ten Days in the Land of the Montezumas 255
  Tuberculosis Among the Winnebago 358
  Typhoid Fever in Nebraska Now and in Pioneer Days 218
  Ultraism Versus Conservation in Obstetric Practice 119
  What Will the Harvest Be 122
  What Shall we do to be Saved 92
  What we Know about Cancer 29
  Wightman, Hugo 188
  Wood, Leonard, a College President 187
  Elkhorn Valley Number, An 394
  Do it Now; One Year Has Passed 294
  Cancer Campaign, The 395
  Present Status of Hospitals in the U. S., The .396
  High Flying as a cure for Deafness 395
Epidemic Encephalitis, Francis W. Heagey 3
Epidemic Encephalitis in Gage County, F. W. Buckley 111
Epidemiology of Communicable Diseases, Henry Farrell 72
Etiology, Treatment and Results in 100 Cases of Backache, A. L. Smith 179
Focal Infection and its Relationship to Systemic Disease, A. F. Tyler 181
Focal Infection in the Mouth, Fred W. Webster ..147
Functional Diagnosis, C. R. Kennedy 302
Gastroduodenostomy versus Gastrojejunostomy, Henry B. Boyden 342
Heat as a Method of Treatment of Cancer, James F. Percy 133
Hysterectomies, Three, W. H. Betz 204
Indications for Ceasarean Section, etc., Dwight Sigworth 375
Infantile Cyclic Colic, John V. Reilly 195
Infantile Eczema, Floyd S. Clarke 193
In Memoriam ................N..NN..N....N216, 217
Intra-Abdominal Injuries Due to External Violence, A. F. Jonas 65
Lyon-Meltzer Gallbladder Drainage, A. Sachs 225
Management of the Heart in Pneumonia, The, George P. Pratt ....
Medical Arts Building 363
Medical Drainage of the Gallbladder, A. Sachs 184
Methyl Alcohol Poisoning, Francis W. Heagey ...316
Nebraska Supreme Court Decision Abstract 124

NECROLOGY—
  Anderson, C. A. 128
  Arnold, H. J. 160
  Arnold, Harry L. 260
  Boyd, Frank P. 64
  Brother, Ferd 32
  Conwell, William F. 400

109393 OCT 2 - 1922

Dyer, Isadore ... 32
Gibson, H. C. ... 64
Hershman, C. E. ... 64
Jordan, B. H. ... 160
Kantzler, R. ... 128
Knott, J. M. ... 224
Lake, Frederick W. ... 260
Lewis, Wilmer O. ... 260
Loughridge, W. K. ... 224
McArthur, Robert J. ... 400
McCaw, H. E. ... 328
McKibbon, J. W. ... 296
Merriam, L. A. ... 96
Mitchell, J. W. ... 328
Morey (Moriarty) Pierre C. ... 400
Muirhead, A. L. ... 192
Paine, B. L. ... 128
Palmer, D. S. ... 400
Purdum, J. R. ... 400
Quincy, Mary A. ... 32
Smith, Hiram L. ... 364
Soloman, J. J. ... 64
Steiner, N. F. ... 64
Stevens, J. F. ... 122
Stockert, C. F. ... 224
Swetland, Agnes V. ... 192
Tilden, George ... 296
Wenger, E. S. ... 328
Williams, Josephus ... 296
Neurocirculatory Asthenia, M. J. Breuer ... 163
Observations in 150 Cases of Gallbladder Disease, J. S. Welch & S. O. Reese ... 329
Passing of the Family Physician, The, J. Lue Sutherland ... 305
Physician as a Citizen, The, M. S. Moore ... 161
Physiological Empyema Tube, A., Czar C. Johnson. 357
Pituitary Disease, Four Cases of, Geo. W. Covey.. 97
Plea for More Carefully Planned Tonsillectomies, C. G. Baird ... 310
Postoperative Complications of Acute Mastoiditis, R. A. Peterson ... 23
Potter's, (Dr. Irving W.) Method of Elective Version in Obstetrics, Daisy Hansen ... 109
Precancerous Lesions of the Uterus, Palmer Findley ... 278
Prolapse of the Uterus, C. A. Roeder ... 378
Radiotherapy in Cancer, D. T. Quigley ... 280
Rational Viewpoint in the Practice of Medicine, A, Irving S. Cutter ... 243
Reorganized State Medical Society, A, C. A. Roeder. 83
Report of Female Infant with Double Inguinal Hernia, Prolapsed Tube and Ovary-Operation, Recovery, etc., H. M. McClanahan ... 307
Resolutions ... 26, 123, 124
Revision of Un-united or Mal-united Fractures, H. W. Orr ... 1
Some Commonly Overlooked Foci of Infection, J. G. Parsons ... 20
Some Practical Points About the Tonsils, James C. Tucker ... 311
Standardization of Nebraska Hospitals, Frank Conlin ... 388
Sudden Death in Infantile Eczema, Andrew Sinamark ... 369
Summary of 563 Cases of Gallbladder Disease, A, Byron B. Davis ... 336
Syphilis as Seen at the Night Venereal Clinic Univ. of Nebr. Dispensary, C. R. Kennedy ... 80
Technique for Complete Appendectomy, K. S. J. Hohlen ... 174
Thrombosis and Embolism of the Mesenteric Vessels, B. B. Davis ... 101
Traumatic and Effort Hernia, J. W. Duncan ... 235
Treatment of Chronic Arthritis with Special Reference to End Results, W. L. Bierring ... 46
Treatment of Diabetes Mellitus, A. D. Dunn ... 297
Treatment of Eclampsia, C. R. Watson ... 138
Treatment of Injuries to the Spine, H. W. Orr ... 77
Treatment of Trachoma, J. M. Walsh ... 19
Typhoid Fever? A. K. Detwiler ... 59
Urinary Infections in Early Life, Newell Jones ... 9
Variation in the Strength of Tincture of Digitalis as Tested by Biochemical Methods, A. L. Smith. 104
Vital Statistics of Nebraska ... 158
X-Ray Diagnosis of the Diseases of the Alimentary Canal, Albert M. Pfeffer ... 11
X-Ray, Radium and Surgery in the Treatment of Cancer, R. L. Smith ... 282
AUTHORS—
Baird, C. G. ... 310
Betz, W. H. ... 204
Bierring, Walter L. ... 46
Boyden, Henry B. ... 342
Breuer, Miles J. ... 163, 371
Buckley, F. W. ... 111
Clarke, Floyd ... 193, 354
Conlin, Frank ... 388
Cooper, A. L. ... 347
Covey, Geo. W. ... 97, 267
Cutter, Irving W. ... 243
Davis B. B. ... 101, 336
Detwiler, A. K. ... 59
Duncan, J. W. ... 235
Dunn, A. D. ... 297
Emmert, Max ... 75
Farrell, Henry ... 72
Findley, Palmer ... 278
Greene, J. L. ... 33
Hansen, Daisy ... 109
Heagey, Francis W. ... 3, 316
Hilton, D. C. ... 269
Hohlen, K. S. J. ... 174
Hopkins, S. R. ... 221
Johnson, Czar C. ... 70, 357
Johnson, O. D. ... 86
Jonas, A. F. ... 65
Jones, Newell ... 9
Kennedy, C. R. ... 80, 302
Kern, W. B. ... 135
Kully, B. M. ... 151
Long, F. A. ... 27, 56, 59, 92, 93, 122, 154, 155, 186, 187 188, 218, 254, 255, 258, 291, 292, 324, 358, 359, 361 394.
Lord, J. P. ... 129
McClanahan, H. M. ... 307
McGrath, B. R. ... 93
Moore, C. G. ... 223
Moore, M. S. ... 161
Murphy, J. Harry ... 354
Orr, H. Winnett ... 1, 77, 144, 176, 201, 250, 285, 319, 350 391.
Parsons, J. G. ... 20
Percy, Jas. F. ... 133
Peterson, R. A. ... 23
Pfeffer, Albert M. ... 11
Philbrick, Inez C. ... 113
Pratt, George P. ... 365
Quigley, D. T. ... 280
Reese, S. O. ... 329
Reilly, John V. ... 195
Roeder, C. A. ... 83, 378
Ross, W. L. Jr. ... 106
Rudloff, Frank X. ... 377
Sachs, A. ... 184, 225
Sage, Earl C. ... 142
Sigworth, Dwight C. ... 375
Sinamark, Andrew ... 369
Smith, A. L. ... 104, 179
Smith, R. L. ... 282
Sutherland, J. Lue ... 305
Thompson, Warren ... 355
Tucker, James C. ... 311
Tyler, A. F. ... 41, 181, 274
Walsh, J. M. ... 19
Watson, C. R. ... 138
Webster, Fred W. ... 147
Welch, J. S. ... 329
Wiedman, Earl V. ... 197
Wohl, M. G. ... 383
Wolcott, W. Eugene ... 49
Wood, Francis Carter ... 261
Young, G. Alexander ... 312

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CONTENTS

Page
The Revision of Un-united or Mal-united Fractures, H. Winnett Orr, M. D., F. A. C. S., Lincoln 1
Epidemic Encephalitis, Francis W. Heagey, M. D., Omaha 3
Urinary Infections in Early Life, Newell Jones, M. D., Omaha 9
The X-ray Diagnosis of the Diseases of the Alimentary Canal, Albert M. Pfeffer, Omaha 11
Treatment of Trachoma, J. M. Walsh, M. D., Rapid City, S. D. 19
Some Commonly Overlooked Foci of Infection, J. G. Parsons, M. D., Sioux Falls, S. D. 20
Post-Operative Complications of Acute Mastoiditis, R. A. Peterson, M. D., Sioux City, Ia. 23
Editorial 27
State Notes 31
Society Notes 31
About the Doctor 31
Married 32
Deaths 32
Book Review 32
Books Received 32

The Revision of Un-united or Mal-united Fractures.

H. Winnett Orr, M. D., F. A. C. S., Lincoln.

It is ordinarily considered that the problem of an ununited or mal-united fracture is very different from that which is presented at the time of the original injury. As a matter of fact, there are only a few points of difference and many points in the treatment which are exactly the same on both occasions.

It so happened that in both Great Britain and France I was situated at points where it was possible for me to see a great many of the late results in fractures.

It is no longer a secret that in the fall of 1918 the British found themselves with a serious problem involving thousands of patients on account of failure to get good results in the early treatment of fractures. Late in 1918 a special study was made of the results in fracture of the femur. In consequence special surgeons and special hospitals were designated for femur cases. That much better work was done from that time forward was due largely to the efforts of men like General Sir Robert Jones, Major Sinclair, Major Pearson and a few others.

To these special investigations and to the officers above mentioned the Americans were indebted in large measure for the better results obtained in treatment of fractures of the femur in the hospitals of the American Expeditionary Force.

We have a great many poor results in the treatment of fractures in civil practice. Although entirely satisfactory data are not available I am willing to venture the estimate that the results in more than thirty percent of the fractures in civil practice are unsatisfactory. Some of the unsatisfactory results are much more serious than others. Complete disability following fractures is perhaps relatively unusual. However, even such results are easily found if one seeks for them.

If I had not already been impressed with the inefficiency of treatment methods in civil practice I should certainly have been convinced by my military experience. After all most of the defects in the medical service of military hospitals could be traced to unsatisfactory methods of military officers who were only one tenth medical officers and nine tenths civilian practitioners.

I was so situated in the military service as Consultant in Orthopedic Surgery Base Section No. 1, A. E. F. that there came into my department a considerable percentage of all the serious casualties in France. We saw at Savenay not less than seventy-five percent of the fractures, joint injuries, amputations, and peripheral nerve injuries that occurred in France.

As far as possible these patients were carefully checked at Savenay as they arrived. This was done as to their condition on arrival to determine what was required in the way of treatment, surgical operation or splints. The duration of further treatment in France was determined, and the time when they would be fit for transportation to the United States decided upon.

In general it was found that twenty-five percent of all patients received needed splints but had none. Twenty-five percent more required surgical operation, revision of position, or re-splinting either for protection or for treatment or for both. These were patients of all kinds. Fracture of the shoulder, humerus, and elbow came regularly to the hospitals without union or with mal-union and without splints. The same was true to a less extent even of fractures of the femur and leg.

At once the great problem presented itself as to whether these patients should be revised, put back into good position, operated upon, or whether they should be sent to the United States for operation and treatment under more favorable conditions. Acting upon the teaching of General Sir Robert Jones and our Chief Consultant in Orthopedic Surgery in France, Colonel Joel E. Goldthwait of Boston, we adopted the policy at once of revising all unsatisfactory fractures practically "on sight."

To shorten this paper I shall give you our experience in only one class of injuries. I ask you to bear in mind, however, that the same policy was followed in fractures of the forearm, leg, and femur. I shall speak now of fractures of humerus and the elbow. Our experience included approximately seven hundred of these cases.

At the time of such a man's injury he was usually operated upon or dressed at the front and put in a long Thomas arm splint with a ring at the top, for transportation. The elbow was straight and the hand pronated. Sometimes there was not much traction, sometimes there was too much. I saw several arms that had been stretched to a length of one or two inches greater than the length of the arm on the other side.

We saw these fractures from a week or ten days to fourteen weeks after the injury. The rule was that all such arms should be taken out of the Thomas splint, the elbow flexed, the forearm supinated, and either a Jones humerus traction splint or plaster of Paris cast put on. This rule was made to apply in all cases no matter how large the wound might be or where it was situated.

It was considered that by following this rule secondary changes in position, if necessary, could be made upon the patient's arrival in the United States with such attention to details in the final result as might be necessary.

The promulgation of this rule aroused considerable opposition. The flexion of septic elbows or elbows in the vicinity of septic wounds in the arm was considered to be inviting disaster. From a very considerable experience, however, with similar and even older cases during my year's duty with the British I had found that to wait for healing before these manipulations were attempted was to lose the chance for a good result and to run even greater risks.

During the months of greatest activity in the care of these patients (Aug. 1918-Feb. 1919) this rule was adhered to with almost no exceptions. Arms with every degree of serious compound bone, and joint injuries were treated in this fashion. So far as I know in the entire series only one arm was amputated on account of a condition which could be traced to the manipulative correction of position.

Attention was always given to the securing of adequate drainage. Flare-ups in the infection occurred in a few cases with a temporary rise in temperature for a few days. Even these, however, were comparatively rare.

As a result of our experience I desire to submit the following conclusions which I commend to the consideration of every surgeon. First, it is just as important to "set" a fracture late as early; that is, at whatever stage the patient is seen. It is important to put the part in as good condition as possible for position and usefulness. Second in importance to position comes immobilization. The parts having been restored as nearly as possible to normal they must be carefully immobilized. It must be born in mind that merely to put on a splint does not mean immobilization.

Second—In manipulating a compound fracture it is of great importance to manipulate with as little damage as possible. Secure the position desired with as little manipulation as possible, then put the parts in a position of perfect comfort and rest in the fixative apparatus. (Plaster of Paris preferred).

Third—There is scarcely any malposition or mal-union that cannot be improved by following the above suggestions. Any considerable improvement back toward normal position justifies a proper surgical attempt to do so.

Finally, after secondary correction of fracture disability or deformity the so-called reconstructive methods become especially important. The application of electricity by the Bristow method to temporarily paralyzed or weakened muscles may mean much in the functional outcome. Suitable employment to induce the return of function or the development of new function is even more important.

Finally, in many cases complete rehabilitation or vocational re-education is the important or necessary thing. This latter should certainly become a fixed principle in dealing with our civilian wounded. It is one of the outstanding lessons of the war.

Epidemic Encephalitis.*

Francis W. Heagey, M. D., Omaha.

For over a year the attention of the medical profession of America has been directed to the great number of cases with encephalitic symptoms. Many of the cases, until recently, have been diagnosed poliomyelitis, brain abscess, acute paralysis agitans, cerebral embolism, hemorrhage, thrombosis, brain tumor, meningitis, etc. With the increasing amount of clinical material it has been possible to define a distinct clinical syndrome. In 1917, in Austria, von Economo described the first cases of this type under the name of lethargic encephalitis. Netter of Paris, MacNalty and Wilson of England, Tilney and Riley, and Bassoe, United States, during 1918 and 1919 contributed much to our knowledge of the disease. That it is not a new disease is well established for it has appeared under many captions during the last 500 years. Sweating sickness has been common in England in epidemics since 1529. Italy had an epidemic of catatonia. In 1712 Camerarius reported a catarrhal epidemic with lethargy in Tubingen, and in 1771 found both Europe and America in the grip of a catarrhal epidemic with encephalitic symptoms. In 1800 Russia had an epidemic which was cerebral in type. The epidemic of 1890 was accompanied by the same type of disease.

Etiology.

When the pandemic of influenza was on the wane, epidemic encephalitis appeared. Whether influenza has a direct bearing on the incidence of epidemic encephalitis, it is impossible to say. Only thirty-six cases of 115 analyzed gave any history of a respiratory infection during the year preceding the onset of the epidemic encephalitis. Two months was the average interval between the influenza and the epidemic encephalitis. The great numbers of influenza cases and the comparatively few cases of epidemic encephalitis is noteworthy. Again the average age of incidence in the influenza epidemic in Omaha, 1918 and 1919 was 23 years, whereas 46 years is the average age in epidemic encephalitis. Finally, von Economo, Austria, and Netter, Paris, saw many cases of epidemic encephalitis before the influenza epidemic of 1918. Von Weisner, working with Economo's first case, isolated a diplo-streptococcus from the brain. Upon inoculating an ape with this organism, he obtained an hemorrhagic encephalitis but the other pathological changes were not typical. MacNalty and McIntosh in England found two organisms, one a short, thick, gram positive, anaerobic bacillus, pathogenic to mice, and a diplococcus generally associated with the former in the sections. Straus of Rockefeller Institute obtained a filtrable virus from naso-pharyngeal secretions of epidemic encephalitis cases which produced the disease in apes but he has been unable to isolate definite organisms.

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*Read before Nebraska State Medical Association meeting, May 26, 1920.

From the blood of one of our cases, a green streptococcus was isolated whose cultural characteristics were very similar to those of organisms obtained from influenza cases in the Omaha epidemic of 1918 and 1919. No doubt there exists a close relationship to anterior poliomyelitis. Whether epidemic encephalitis is due to a filtrable virus or to a coccus, will require time and more work to determine.

Pathology.

In a region so difficult to examine as the brain stem, it is remarkable how definite a pathological picture has been set forth by the investigators. Marinesco, McIntosh, Tilney and Riley, and Bassoe have given us the most information. In the only case of our series which came to autopsy, the congestion of the frontal lobes, the patchy edematous meninges and the marked thickening of the basilar meninges, were apparent in the gross. On microscopic section, the brain stem substance was soft and numerous punctate hemorrhages were found in the mesencephalic and thalamic areas. Microscopic section showed a marked edema of peri-aqueductal grey matter with small hemorrhages into the white and grey matter. The venules, veins, and precapillary vessels had a perivascular infiltration with lymphocytes, plasma cells and mononuclears. Many of the vessels were thrombosed. Neuronophagia or satellitosis were not present. The chief pathological changes shown in the literature may be summed up as follows:

1. Meningeal edema and thickening.
2. Softening and congestion of both grey and white matter of the brain and pituitary gland.
3. Punctate hemorrhages in mesencephalon, thalamus and basal ganglia.
4. Thrombosis of small vessels.
5. Perivascular infiltration of small vessels of the brain stem.
6. Edema of the mesencephalic area.

Symptomatology.

The location of the lesions in the mesencephalon, the switchyard of the central nervous system, accounts for the multitude and diversity of the symptoms. The small number of cases in any one locality with the wide range of symptoms, has made diagnosis difficult. Tilney and Riley, and MacNalty, first classified the cases, simplifying the problem. On the analyses of 115 cases and a close study of our fifteen cases we have arranged the symptoms on an anatomical and pathological basis, see Table No. 1. It will be seen from this table that the cases of epidemic encephalitis have been arranged in eight groups:

1. Polioencephalitic.
2. Lethargic.
3. Paralysis agitans.
4. Cataleptic.
5. Meningitic.
6. Cerebral.
7. Polyneuritic.
8. Myelitic.

That any classification is artificial is apparent when it is seen that many of the cases fall into several groups depending upon the stage in disease or the developments over the entire course of the disease in that individual. The anatomical location of the lesion is in doubt in several instances, e. g., lethargy may be due to a lesion in the iter, thalamus, or pituitary gland, so that it has been necessary to put in the chart the ideas of the various authorities: iter, Marinesco and MacNalty; thalamus, von Economo and Flexner; pituitary, Cushing and Climenko. Over 70% of the cases present one or both of the following symptoms: eye disturbances with cranial nerve palsies, or lethargy. In the diagnostic triad of symptoms of epidemic encephalitis, i. e., ophthalmoplegia, lethargy and spinal fluid findings typical of no other condition, the ophthalmoplegia is by far the most important. The ophthalmoplegic symptoms are often slight and evanescent. In fact we consider the presence of two of the foregoing symptoms in the disease syndrome necessary for the diagnosis of epidemic encephalitis. Ptosis, diplopia, anisocoria, sluggish eye reflexes occur in from 30 to 50% of cases. The involvement of the third and sixth cranial nerves are the most common, 65% and 40% respectively. Seventh and twelfth are next in frequency. Many times a history only of eye symptoms is present when the patient is seen. Many patients have come to us with facial palsies or ptosis which had not been noticed so that the history may often be at fault in the attempt to elicit the ophthalmoplegic symptoms.

Lethargy.

Von Economo found this condition so frequently that he named the disease lethargic encephalitis. Netter changed this to epidemic encephaltis because, as Tilney and Riley say, the patient was lethargic, not the encephalitis. Lethargy was present in 79% of the series and insomnia in 20%. We have included insomnia in the lethargic group because it seems easy to conceive of a toxin or chemical disturbance which, instead of producing lethargy, stimulates or irritates the sleep center so that insomnia results. All insomnia cases invariably lapsed into lethargy at the end of three to seven days. The lethargy is a sound sleep from which the patient can be aroused and is well orientated as to his environment. He can answer questions readily and takes nourishment voraciously, but when left alone he immediately lapses into sleep again. The typical patient lies with his head on the pillow, legs and thighs flexed on the body, breathing naturally, with the body bathed in perspiration (100% in our series). On being awakened, one notices a mask like expression, wide open eyes with a staring expression and pupils in mid-dilatation. Many of the cases have the ptosis so that the patient appears heavy lidded. Many patients came in complaining of the inability to keep the eyes open. Thirty-five per cent of the cases complained first of drowsiness. This lethargy rapidly increased in the more severe cases and persisted on the average from two to three months. The only change occurring in many of the cases followed lumbar punctures when the patient was brighter for 12 to 24 hours following the puncture, and then lapsed into lethargy again.

Catalepsy was present in 6% of the cases. These cases seemed to be awake and conscious but unable to express themselves and all muscular action was retarded or doughy. The extremities when placed in any position retained the position for long intervals.

Vertigo was present in 20% of the cases, whether due to cerebellar disturbance, eye changes or middle ear, is not known and this probably accounts for the high percentage.

Nystagmus and ataxia were not common and these also may be due rather to ocular muscle incoordination than to posterior column changes or cerebellar lesions.

Polypnea was present in three cases. One of the patients, with a respiratory rate of 60 per minute for 36 hours, recovered; another, with a rate of 80 to 160 per minute, died. The former seemed of respiratory center origin, the latter of phrenic nerve origin, because of the rapid diaphragmatic movements.

Dysphagias are probably more common than the reported 13%. Many of these were terminal dysphagias, such as are seen in the bulbar palsies.

Rigidity of the neck, Kernig and Tache cerebrale were present in 20% of the cases. Headache was complained of in 57% of the cases. The number complaining of headache was increased by trigeminal sensory disturbances and by the ocular upsets. Meningitic symptoms play a minor part in epidemic encephalitis. Rigidity of the neck in 13% probably includes many spastic necks of cataleptic types. The absence of much change in the spinal fluids of epidemic encephalitis parallels the scarcity of meningitic symptoms.

Paralysis agitans: Cases of this stamp are few although the "mask" like countenance is reported many times. This same "mask" may be caused by a facial paralysis which is often bilateral. Nine per cent of the cases had a tremor, Parkinsonian mask and scanning speech. The latter was not uncommon in conjunction with other symptoms.

Cord symptoms are uncommon. Bladder disturbances were present in 19% of the cases, usually as a terminal symptom.

The absence of cerebral symptoms is remarkable when we remember the type of infection we are dealing with. Convulsions, epileptiform attacks, peripheral palsies, hallucinations, illusions, mania and depression occurred on the average in one to two per cent only of the cases. Affections of peripheral nerves in so far as pain was recorded were more frequent; 26% had pain in the extremities; 9% had parasthesias. We have seen several cases of peripheral nerve involvement but lacking lethargic or ophthalmoplegic symptoms, we have not included them in this class. As our knowledge increases, many of these obscure cases may be classed in the encephalitis group.

General Symptoms.

Fever and excessive perspiration were the most common, the former in 57%, the latter in 100% of our series but only 6% of the 100 cases. Loss of weight, voracious appetite, epistaxis, cervical adenitis and tachycardia are the more common. Temperatures averaged 102°F. Several cases had a pulse rate of 150 for several days at a time.

TABLE NO. 1
SYMPTOMATOLOGY—CLASSED ANATOMICALLY

TYPE	SYMPTOM	100 Cases	15 Cases	PART
Polioencephalitic Ophthalmoplegia	Cranial Nerve Palsies			Mid-Brain, Pons and Medulla
	III	60	6	
	IV	2	0	
	V	7	3	
	VI	34	6	
	VII	12	5	
	VIII	4	2	
	IX	2	0	
	X	1	0	
	XI	0	0	
	XII	11	2	
	Eyes			
	Diplopia	50	8	
	Anisocoria	25	4	
	Ptosis	20	6	
	Lack of light and accommodation reflex	12	4	
	Sluggish pupils	20	4	
	Retinal changes	10	2	
	Swallowing	13	0	
	Vomiting	8	1	
	Polypnea	1	2	
Lethargy	Lethargy	69	10	**Pituitary, Thalamus Iter and Cerebrum**
	Insomnia	16	4	
Cataleptic	Catalepsy	20	6	**Cerebellum**
	Vertigo	19	5	
	Nystagmus	17	1	
	Ataxia	4	2	
Meningeal	Headache	47	10	**Meninges**
	Rigidity Neck	12	1	
	Delirium	24	6	
	Kernig	3	3	
	Tache	1	0	
Paralysis Agitans	Parkinsonian Mask	9	3	**Lenticular Nucleus**
	Spasticity		4	
	Festination	3	0	
	Tremor	30	5	
Myelitic	Bladder	15	4	**Cord**
	Reflexes disturbed	25	7	
	Babinski	14	7	
	Reflexes absent	2	2	
	Clonus	5	4	
Epileptomaniacal	Convulsions	0	2	**Cerebrum**
	Paralysis	0	1	
	Asynergies	20	0	
	Epileptiform attacks		3	
Psychotic	Hallucinations		3	
	Illusions		3	
	Depression	9		
	Delirium	24	7	
Polyneuritic	Pain in extremities	23	3	
	Sensation disturbed		1	
	Paraesthesias	6	3	

TABLE NO. 1
SYMPTOMATOLOGY—CLASSED ANATOMICALLY

TYPE	SYMPTOM	100 Cases	15 Cases	PART
	General symptoms			
	Epistaxis	1	1	
	Cervical adenitis		2	
	Tachycardia		1	
	Weight loss		5	
	Appetite increased		6	
	Fever	43	13	
	Perspiration	6	15	
	Hiccough	5	0	
	Tears	4	0	

Laboratory Data.

The blood Wassermann tests were all negative. The white blood cells averaged 10,200 with 72% polynuclears. The highest white count was 22,000. There was no change in the number of red corpuscles or hemoglobin percentage. Blood cultures were uniformly negative, except one of our series where a green streptococcus was recovered. This organism was agglutinated by the patient's serum but was not affected by other sera.

Urine.

Negative except for such changes as are incident to acute infectious processes.

Spinal Fluids.

The nineteen fluids in our series were all clear and the pressure was increased in 50%. The average number of cells was nine per cubic millimeter, being mononuclear in type. Globulin was positive in 25%; all Wassermann tests were negative. Of twelve gold chlorides, eight were weakly luetic or paretic in type. The count, etc., depended upon the day in the disease when the spinal fluid was obtained. One case on the 35th day had 24 cells, plus 2 pressure, globulin plus 2; on the 49th day, 11 cells, decreased pressure and globulin; 63rd day, 3 cells, negative globulin and no pressure. The gold chloride curve changed from mildly luetic in type to a normal type in the last fluid. Out of 64 spinal fluids of the 100 series, there were 16 cells as an average, the fluid was clear, pressure increased in 10% only; globulin was positive in 50%. In both series, all cultures and smears were negative.

Prognosis.

Out of Barker's eight cases none died. Of Economo's eleven, six died; seven of Netter's fifteen cases died; of Wilson's thirteen cases, two died; of Tilney's twenty cases, five died. Out of the one hundred cases collected from the American literature, thirty-one died. Of our series, four died out of fifteen; five recovered wholly in one and one-half to four months, and four at the end of two to three months have 5th, 6th, 7th and 8th nerve disturbances; one still has pain in the arm after two months. Disturbances in cerebration and equilibrium took on the average, 3 to 4 months to clear up entirely. The same held true for paralysis both of the cranial and peripheral nerves. The facial nerve palsies are of longer duration, four to five months. Asthenia, depression, dizziness, may persist for seven months as an average. The fatal cases generally terminated in the first few days or weeks of the disease so that the longer the course of the case, the better are the chances of recovery. The four deaths in our series resulted in three, five, six and sixteen weeks.

Treatment.

There is no specific treatment. Good nursing, absolute rest and freedom from any excitement is necessary. The patient should be placed in a hospital because of better laboratory facilities and because of the need of repeated lumbar punctures. Lumbar puncture was of decided benefit in ten of our series. The patients were brighter, the cranial nerve palsies were improved, and the headache was relieved by the procedure. Opium should be used with care except in the early stages when the pain is severe. The eyes must be protected from the light, and in cases of corneal anaesthesia and ptosis, cleansed and protected from foreign bodies. Large doses of urotropine can be given only if the urine is checked daily. No material benefit has been derived from its use. It can be harmful. The bladder should be watched for retention and the chest examined daily. Care should be used in maintaining a high fluid intake. The skin must be watched carefully as bed sores are common.

Conclusions.

1. The diagnosis of epidemic encephalitis must be made by exclusion. The analysis of 100 cases in recent American literature and of our own fifteen cases, has shown a diagnostic triad consisting of ophthalmoplegia, lethargy, and a typical spinal fluid.

2. The typical spinal fluid of epidemic encephalitis is clear, with a slight increase in pressure, globulin and number of cells. The gold chloride is a mild luetic or paretic curve. The Wassermann test, cultures and smears are uniformly negative.

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Discussion.

A. A. Johnson, M. D., Omaha.—I greatly enjoyed this paper. In association with Dr. G. A. Young, I have seen twelve cases of this disease. The first case I saw was last fall. In looking it over we thought it was a case of cerebro-spinal syphilis, and sent him to the hospital and gave salvarsan. He had a negative Wassermann reaction and a typical picture. After three doses, the patient was sent home very much improved. We felt it did not cure the disease, but was probably good medicine, anyway.

In Dr. Heagey's statistics, I notice he states the cell count of a spinal fluid is almost always increased. The highest cell count of our cases was 75. We have a case at the present time with a cell count of 66. In almost all of our cases we have noticed clonic contraction of the abdominal muscles.

I happened to see day before yesterday a patient who was one of Dr. Heagey's early cases. Dr. Conlin saw the case and made a diagnosis of encephalitis. We did a lumbar puncture at the dispensary and found no increase of pressure and no increased cell count, but increased globulin. In talking to Dr. Heagey afterward, we found it was one of his early cases.

In our series of cases, we have had one case that died at the end of forty-five days after a prolonged period of sleep, and no consciousness throughout the period.

J. M. Mayhew, M. D., Lincoln.—In looking over the result, it corresponds clearly with the symptomatology as observed. In the symptoms as described, with a negative spinal fluid, we are not justified in making a diagnosis of encephalitis, because there are so many processes that are capable of going on in the nervous system that will give exactly the same course of events.

I will refer to a series of about thirty cases which came into the service with which I was associated, after an incidence of 12,000 influenza cases. Our attention had been specially called to watch out for epidemic encephalitis, and gradually this diagnosis in thirty cases came in. As they were analyzed, a few of them turned out to be nothing more than catalepsy. Others turned out to be cataleptic forms of dementia praecox, without spinal finding. The majority of them proved to be cerebro-spinal syphilis; and out of thirty cases, only two could be diagnosed as encephalitis lethargica.

It seems to me from the literature I am able to get hold of, that there must be some direct association between the respiratory epidemics and this epidemic of encephalitis, for the reason that the increase in numbers of encephalitis was marked after the epidemics, and the mere fact that encephalitis occurs independent of them does not necessarily do away with this argument, for the reason that influenza is endemic. Until there is a greater proof than the mere finding of a diplococcus in the ophthalmias, I do not believe we are entirely justified in saying that there is not an association between the two diseases. They have been concurrent in all history.

One more point: The symptomatology points so definitely to the pituitary gland and its involvement in the lethargic type, that I would like if possible to have from the doctor more information regarding his findings.

F. E. Coulter, M. D., Omaha.—This I consider a very important paper. It is one of the subjects that has been called to our attention within the last eighteen months, and after seeing a number of these cases and watching them until the end and then when you come to realize there are from 30 to 50 per cent that die, it seems to me we should get away from the lack of interest in the subject of "encephalitis lethargica" or "epidemic encephalitis" which I think is a very much better name.

Of course we must keep the entire number of cranial nerves in our mind at these times. I do not know anything that will help us to brighten up our anatomy more than to keep the anatomy and physiology of these twelve pairs of cranial nerves in mind when we are called to one of these cases.

The doctor was unable in the short time he had to go into any special details in connection with the symptomatology. I have been watching in some twelve or fifteen of these cases the condition of the abdominal reflexes. This is coming I believe to be one of our best diagnostic points. We will find out as time goes by that it is well worth our while to study this complex more carefully. The abdominal reflex has been demonstrated after observing a great number of cases to have its arc in the brain and I have had this interesting experience with the abdominal reflexes in encephalitis. I have found them invariably absent in these cerebral cases while the costal reflexes, which are obtained by a blow upon the costal cartilages, are found to be present. They, the costal reflexes, are represented in the spinal cord, so it is understood why they may be present. But our abdominal reflexes are absent as might be expected. It seems to me this gives us another fairly clear diagnostic point in connection with this disease. Take myelitis or some other forms of cord trouble and your abdominals may be present, but your costals will be absent. So that it is well to keep these in mind as additional signs that will help us reach conclusions in questionable cases.

The subject therefore being a broad one, we should keep in mind not only the twelve pairs of cranial nerves for you will find paralysis or irritation of some of them but we have trouble with the vomiting temperature-stupor and all that sort of thing as well.

One case I saw recently resembled the usual encephalitis without lethargic symptoms. He instead was restless and sleepless, he had cranial paralysis with temperature. In the third week he developed a purpura which was most pronounced. Oozing occurred through the mucous membrane of the nose, mouth, and ears, and from the bowels and the kidneys, with petechiae in the skin, in short we had hemorrhage. All over his body there were various sized bluish blotches. After considerable effort and repeated transfusions, together with the usual medical measures, we succeeded in checking this particular trouble. The viscosity of the blood was increased, and we were gratified to know we had controlled this phase of his condition. He died later, however, from an involvement of the medulla and spinal bulbar symptoms. There was a huskiness in speech and difficulty in swallowing, and this was the cause of his death.

I want to thank Dr. Heagey for calling our attention so broadly to this subject, which I think is of great importance.

Dr. Heagey, closing. No time was spent in the paper on differential diagnosis. So far as the pathological picture of the disease is concerned, there is little difference from other conditions except in the location of the lesions. It was largely differentiated from syphilis by negative Wassermann tests on blood and spinal fluid and the course of the disease.

The relation of the disease to influenza has been mentioned. In our series of fifteen cases, there was not a single case but that had some severe infection of some kind preceding the onset of the encephalitis. The recent work of Strauss seems to establish beyond a doubt bacterial etiology for epidemic encephalitis. Whether this is the same etiology as influenza will have to be shown as time goes on.

In regard to the lesion explaining the lethargy, the pathologist at the University of Virginia lays great stress on lesions in the pituitary gland. The pathological changes in the gland as reported are similar to those found in the rest of the brain stem. Whether the cause of the lethargy is located in the pituitary, thalamus or cerebral cortex is of course a question which has not been decided.

One of the series of fifteen cases had a skin eruption. This patient was five years old. The rest of the symptoms justified the diagnosis of epidemic encephalitis. It was interesting that a pure culture of pneumococcus was obtained from the skin lesions, from the stool, and from the sputum.

Urinary Infections In Early Life.

Newell Jones, M. D., Omaha.

Probably a better heading for this paper would have been, "pus in the urine in early life," as we intend to consider the clinical side of sixty-nine cases of pyuria which have come to our office since January first of this year.

Much work has been done in the last few years in the effort to determine the route of infection, but as yet there is very little agreement. It seems to us very probable that the infection route varies in different cases.

Our cases have ranged in age from very young infants to youths of twelve years. As yet we have seen no cases as young as reported by Hemholtz, who reports three cases only a few days old. Most of our cases have given something in the history which made us suspicious of some urinary disturbance, but in about 20 percent the diagnosis was made only on a routine urinary examination. We do not go as far as some in catheterizing every child without a very apparent diagnosis, but in a child with fever where some very apparent cause does not exist, we will not make a definite diagnosis without getting a specimen of the urine. As has been reported many times before, the proportion of girls to boys is about three to one, but more cases are being found in boys as we look more carefully for them. During the period some years ago when the infection was supposed to be entirely ascending, we believe it was more frequently overlooked in boys than at the present time.

We have divided our cases into three groups as follows:

1st. Primary pyuria in which from the history and findings we were not able to find any factor explaining the pus in the urine. We might say also in passing that these are the cases that have given us the most trouble in treatment. In this group there were twenty-four cases.

2nd. Secondary cases in which it seemed there was some other condition predisposing to the pyuria. As a whole these have responded much more kindly to treatment than the primary, and in a number of cases the pus has entirely disappeared from the urine with the clearing up of the predisposing condition. This seems somewhat strange as no matter what the primary infection, it was practically always the colon type bacillus found in the urine. There was a very wide range of primary conditions. Acute gastrointestinal disturbance was the most common with tonsillar infections second. Others were scarlet-fever, pertussis, chronic constipation, subacute appendicitis, specific vulvo vaginitis, otitis, asthma and acute respiratory infections. This group comprised thirty-nine cases.

3rd. In this group we have placed six cases in which the pus, we believed, was only an incident and had no bearing on the clinical picture. One was a case of lymphatic leukemia. Two were cases of nephritis in which the pus appeared during the course f the disease, but did not affect the course in any way. One we now feel sure was a contamination and the other a fatal cardiac decompensation in which the pus appeared a short time before the end.

Symptomatically there is nothing diagnostic, but we have been impressed by the frequency of chills in infants and the apparent well being of a child with an extremely high temperature, also the unusual dryness of the skin. It is not as easy to detect a chill in an infant as in an adult, but by careful questioning it is possible often to get the history of a little spell of blueness or shivering followed by a high fever and sometimes, but not often, sweating. If you get this kind of a history in an infant, a urine examination will show pus in a large majority of cases. In older children it is not so important. On several occasions we have seen children sitting up in bed playing or bright and happy with a temperature of one-hundred and five and a half and in one case one-hundred and six and a half. If old enough to tell you, they will often insist they do not feel at all sick, just a little warm and often not as thirsty as in other conditions. At this time we can think of no other condition producing so high a fever in which this feeling of well being is so evident. A child that will be sleepy and listless with a temperature of one-hundred and three from a tonsilitis, or a convulsion with the temperature from an acute gastrointestinal upset, will insist on having his playthings with a temperature of one-hundred and five from a pyuria.

It has been nearly as common to find a history of partial retention of urine, as frequency of urination. One case we recall in which the child was only urinating twice in twenty-four hours. Pain on urination is only incidental, not often enough to be of any great diagnostic importance.

The onset is usually sudden with an extremely high fever. Very few conditions produce as high a temperature. As we have already mentioned, one-hundred and five and a half is not at all uncommon. In most of the cases where we found the pus with a comparatively low temperature, we believe the onset of the condition had been sometime previous and the acute symptoms abated or the present attack was only an exacerbation of a subacute or chronic condition.

In the present series we have been extremely fortunate as to fatalities, but it is not at all common to have a death. While there have been no deaths, we are not claiming every case as cured, for from fifteen to twenty percent of the primary cases were still carrying pus on the last examination of the urine. One case in our records, but not included in this group, has had pus for nearly five years with an occasional exacerbation. Suggestions as to procedure thankfully received.

In treatment we have tried to treat the case rather than the condition. Two procedures, however, have been routine.

These are the giving of alkalis to the point of an alkaline urine in the acute stage and the giving of large amounts of water. To render the urine alkaline, requires larger doses in many cases than is ordinarily recommended. At times it has been necessary to give a child of two years as high as one hundred and twenty grains of potassium or sodium citrate in twenty-four hours to accomplish results. The alkalies seem to give a better symptomatic result than anything else, but often do not cure the case. Giving water sounds easy but many times is extremely difficult. Why children with a high fever will persistently refuse water is hard to explain and how to get them to take it, often taxes the resources of doctor, nurse and family.

In the secondary cases, of course, the primary condition is given first place in treatment until relieved. In the acute gastro intestinal cases, we are rather partial to buttermilk feeding where possible, particularly in the infants. Salol in this type of cases also has seemed to help, but must be given in larger doses. Where the condition has been secondary to chronic tonsillar infections, some but not all have become pus free after removal of the tonsils.

After the patient has become symptomatically better with the use of alkalies, a change to an acid urine with large doses of hexamethyltetramine for a few days seems advisable. Here again the dosage must be large. Most children seem to stand sodium phosphate and hexamethyltetramine well in large doses, even to thirty grains a day of each if not continued over two or three days. Two cases have had blood in the urine from the large doses, but both promptly cleared and were markedly improved afterwards. Salol as mentioned before, has been used and at times with very happy results. Autogenous vaccines in the chronic stage have given fine results at times and at others been complete failures, but still are worth trying. Guaiacol as recommended by Dyson, we have never used but intend to at the next opportunity.

During the acute stage, of course, rest in bed is enforced and later everything possible is done to build up the general condition of the child.

Conclusion.

1. Pyuria is an extremely common condition in early life and very frequently overlooked.

2. We know very little as to the source and path of the infection.

3. Symptomatic cures are the rule but many cases retain pus in the urine for indefinite periods with spells of acute exacerbation.

The X-Ray Diagnosis of the Diseases of the Alimentary Canal.*

Albert M. Pfeffer, Omaha.

In 1895 Roentgen (1) announced that the salts of metals, either solid or in solution, obstructed the passage of his new rays. Within two months Dutto (2) proposed the possibility of rendering hollow viscera visible by injecting them with salts. A month later Becher (3) published a roentgenogram of a dead guinea-pig in which he had distended the stomach and a loop of small intestine with lead subacetate. Hemmeter (4) accordingly devised an intragastric bag and proposed that the bag be pushed into the stomach and filled with lead subacetate, thus enabling the shape of the stomach to be outlined on a roentgenogram. W. B. Cannon (5) of Harvard, at the meeting of the American Physiological Society in Boston, December, 1896, made the first public demonstration of the movements of the alimentary canal when he exhibited the phenomena of deglutition by feeding a goose with gelatin capsules filled with bismuth subnitrate. In April 1897, Rumped (6) rendered a pathologically dilated oesophagus visible by pouring into it 300 cc. of a 5% suspension of bismuth subnitrate. To the Harvard Laboratory falls the credit of being the first to use the heavy metal salts mixed with food for X-ray purposes. Observations of gastric peristalsis were presented by Professor Bowditch (7) of Harvard at a meeting of the American Physiological Society in Washington, May, 1897. Roux and Balthazzard (8) at a Paris meeting of the Societe de Biologie, July, 1897, reported similar observations in dog and man. For their human subjects they used 15-20 gms. bismuth subnitrate in 100 cc. water. They could, however, only observe the lower part of the greater curvature. In 1903 Williams (9) published the results of Roentgen work on the alimentary canal comprising observations on stomach, small and large intestines. In 1905 Rieder (10) reported his thorough study of the human alimentary canal by the X-rays.

X-ray revealed much pertaining to the physiology and pathology of the gastrointestinal tract. The passing of ingested food along the lesser curvature as observed by the fluoroscope gave W. J. Mayo (11) the suggestion for his irritation theory of the causation of carcinoma of the stomach, namely, that the constant irritation and changes of hot and cold food substances affecting the lesser curvature explain the occurrence of ulcer and cancer in that region in 80% of the cases.

While the opaque meal has since been changed from the subnitrate to the subcarbonate and the latter substituted by barium sulphate, yet the principles are the same, and all the modern achievements in X-ray diagnosis of the alimentary canal rest on the foregoing fundamentals.

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*Prize thesis from Senior class Creighton Medical College, 1920.

General Considerations.

The X-ray diagnosis of the diseases of the gastro-intestinal tract depends upon the introduction into the alimentary canal of an opaque substance which completely fills the lumen, and observing its passage through it. The evidences obtained are direct and indirect. The direct evidences are abnormalities in contour, size, and position, viz:

Filling defects
Projections into the lumen
Niches
Diverticula
Hour glass deformities
Dilatations or narrowings
Changes in positions of organs.

The indirect evidences are abnormalities in function, viz:

Changes in emptying time.
Stasis
Spasms
Hyperperistalsis or antiperistalsis.

The different X-ray findings in the various organs under consideration in this thesis will be discussed separately with the diseases peculiar to them.

The Opaque Substance.

The opaque substance commonly used is "Barium Sulphate for X-ray Diagnosis," superseding the bismuth subcarbonate, which by its alkalinity interfered with the normal reactions, and the still earlier bismuth subnitrate which was toxic. It is administered as meals by mouth, and as enemas per rectum. The following requirements are laid down by Carman: (12)

1. It should be more or less palatable.
2. Thick enough to hold the salts in suspension.
3. Thin enough to fill all recesses.
4. Not stimulating or neutralizing gastric secretions.
5. Not productive of early pyloric closure.
6. Must be an even, smooth emulsion, not lumpy.
7. Of definite composition to give uniform results.
8. Should be easily and quickly prepared.

The most commonly used formula for gastric and small intestinal examination is: 7 oz. of chemically pure barium sulphate stirred into one pint of buttermilk made from the whole milk. Where this cannot be obtained an emulsion of mucilage of acacia and barium sulphate with water can be substituted. The amount, however, varies with the size of the individual.

The X-ray examination of the oesophagus presents a special problem because of the rapidity of emptying. The most used is the suspension outlined by Hirsch (13) which due to its high content of mucilage, adheres well to the walls of the oesophagus, especially to any ulcerated surface, and can be easily washed off. A unique method, described by Bassler (14) and Nines (15), consists of the introduction of a rubber tube with an inflatable bag at the end, into the stomach. This is then filled with water and pulled into the cardiac orifice. Thus the oesophagus can be kept filled with the barium meal and roentgenograms can be taken. Spangler (16) inflates the stomach with gas, in examinations of the oesophagus, thus obtaining the best view of the cardiac orifice. If a diverticulum is shown, the pocket is best demonstrated by the usual barium meal.

Preparation of the Patient.

Smithies (17) washes the stomach, gives a purgative the day before examinations, and keeps the patient on a liquid diet for twelve hours. But it is generally condemned because the normal function is masked. No catharsis is allowed in upper tract examinations. For the opaque enema the colon is flushed previously. The patient should present himself, however, with an empty stomach. All drugs having any stimulating or inhibitory effect upon the digestive tract should be withdrawn at least twenty-four hours before the examination. Only where it is necessary to differentiate between spasm of reflex and of organic origin, belladonna, in the form of the tincture to tolerance, or 1-100 gr. atropine hypodermically is used at the time of examination.

The Oesophagus.

The normal oesophagus is best observed through fluoroscopy. Abnormalities of the oesophagus are:

1. Diverticula.
2. Benign strictures.
3. Malignant new growths.
4. Spasms.

Diverticula may lie anteriorly, posteriorly or laterally and should be viewed from all sides. The symptoms are: Swelling in neck, periodic emptying of putrefactive food, and gradual emaciation. X-ray findings show a shadow to one side of the lumen remaining after the oesophagus is empty.

The benign strictures usually result from irritating caustics such as phenol or lye passing down the oesophagus in attempted suicides or taken by mistake by children.

The malignant growths are made evident by the X-ray by the amount of obstruction as well as by the site of the lesion which can be easily demonstrated. A diagnosis of malignancy is made by the "bitten out" appearance of the growth and by its location at the cardiac end. At times stomach involvements may be shown.

Not infrequently foreign bodies lodge in the oesophagus, especially in children and the insane. Portions of food, coins, fish bones, pins, plates of false teeth are the usual articles. Both diagnosis and removal are often possible by the fluoroscope.

Spasms.

Hysterical strictures arising chiefly in neurotic women at times associated with some slight abrasion or ulceration originating from impaction of a fish bone are of common occurrence. The symptoms are: difficulty in swallowing, and the "globus hystericus" are intermittent in character. Usually, reflex spasms will relax by administration of belladonna.

The Stomach.

The normal stomach varies in size and position in different individuals. Several types are recognized; the high transverse stomach of fat people, the cow horn type of the medium weight, and the fish hook type common in thin individuals. There are slight changes in the normal motility of these normal stomachs. George and Leonard (18) observed that the normal stomach possesses individuality and with the same technique the same stomach will appear alike in successive examinations. Normal outline may be interfered with by pressure of neighboring organs as: distended colon, hypernephroma, enlarged duodenum, enlarged gall bladder and from spine.

Gastric Ulcer.

The peptic ulcer is usually a circumscribed area, varying in size, situated about the pylorus, and with few exceptions involves the lesser curvature or the posterior wall. The ulcer usually becomes chronic and produces induration with deformity.

To demonstrate these ulcers the prone and lateral positions are used. The prone position shows in profile the greater and lesser curvatures, while the lateral position shows the anterior and posterior walls. Of course proper examinations for peristalsis and general outline are made by the fluoroscope.

X-ray of stomach affords both direct and indirent evidence of gastric ulcer pathology. The direct evidence is based upon the following variations from the normal:

1.—Bismuth in the ulcer crater. When found is pathognomonic, but may not often appear because of the crater being filled with secretions and food debris.

2.—Passage of bismuth through the wall in perforations. Bismuth is found outside the wall of the stomach in a small pouch or pocket, usually of connective tissue. Often times it contains a bubble of gas. Haudek in 1910 was the first to describe this phenomenon, after whom it was named, Haudek's niche.

3.—Filling defect in shadow from induration about the ulcer, due to a local rigidity in the wall showing no evidence of peristaltic waves over an area usually on lesser curvature about two inches in diameter. Repeated exposures of ¼ second will usually produce a blurred outline of the wall due to the presence of peristalsis, but over the indurated area the outlines will be definite, because of absence of peristalsis. The fluoroscope and palpation are used for corroborative evidence.

4.—Hourglass deformity: Hourglass deformities must be ascertained whether functional or organic and if organic must be determined whether due to the induration of chronic ulcer, or due to new growth and adhesions. According to Crane the following differentiation is made between the hourglass of chronic ulcer and the new one of new growth:

Chronic Ulcer.

Hourglass, Sacculated.

Sulcus, band-like and smooth.

Connecting isthmus, eccentric nearer lesser curvature.

New Growth.

Funnel-like, broad and irregular.

Centrical, with symmetrical annular defect.

5.—Pyloric obstruction, other than from new growth, cases of 24 hour residue are usually due to the following causes: (1) benign cicatrix of long duration as proven by an associated secondary dilatation with hypertrothy of the stomach, and violent peristalsis; (2) new growth, differentiated from cicatrices by their own characteristic appearance, and because of short duration there is no marked dilatation of the stomach.

The indirect evidence of gastric ulcer, nonpositive evidence, is based upon the following:

(1)—Delayed emptying time of the gastric residue by spasm of pylorus, usually after 8 or 10 hours.

(2)—Incisure on greater curvature suggest ulcer in opposite side.

(3)—Abnormalities of peristalsis, and tender points over gastric shadows during fluoroscopy, are of lesser significance.

Franklin W. White (19) is of the opinion that none of the signs of indirect evidence can be relied upon for diagnosis, as spasms, 6 hour residue, and changes in peristalsis may be produced reflexly from gall bladder disease or chronic appendicitis or neuroses.

New Growth of the Stomach.

The technique and routine are the same as in ulcer. Fluoroscopy is used while the patient ingests the meal, and observations as to hypermotility, peristalsis, and antiperistalsis are made. Then a series of plates in various positions is taken.

The diagnosis is based upon the presence of a filling defect in the gastric shadow. In the greatest percentage of cases it is found at the pylorus, especially when early. In some cases it is found in the cardiac end.

The defect is usually annular, and in the early cases appears as an elongation of the pyloric gap. The annular appearance distinguishes this from the gastric ulcer of the same region. The filling defect when found in plates of lateral positions definitely eliminates the question of pressure defects, by gall bladder, liver, etc.

The defect is usually irregular and serrated in outline, when this is present it is of pathognomonic significance. The later cases present a more extensive and more pronounced picture of the earlier ones. The canalization is extended over á greater portion of the stomach. The irregular "bitten out" outline presents now finger-like projections into the shadow.

George and Leonard report cases of carcinoma where the stomach walls were very rigid and a tubular canal extended its whole length. On the screen peristalsis appeared to be absent. In such cases although the emptying time is very rapid the patient can eat but very little at a time.

The hour glass appearance resulting from new growth should be differentiated from the one resulting from chronic ulcer (vide supra).

In conditions of degenerating chronic ulcer a roentgenogram presenting carcinoma appearance is of greatest significance, as a resection rather than a mere gastroenterostomy is to be performed.

The negative plate with the proper technique is very positive in eliminating carcinoma.

Rarer Stomach Lesions.

D. C. Balfour (20) reports a case of polyposis of stomach which becomes quite evident by X-ray methods. A number of cases of polyposis of the stomach with accompanying roentgenograms have been reported also by George and Leonard. George W. Holmes (21) calls attention to the presence of pedunculated tumors of the stomach easily diagnosed by fluoroscopy. He reports two cases, one having been diagnosed pathologically as a fibrosarcoma, the other as lymphangio endothelioma. He remarks that Fenwick reported the only other case in the literature of fibrosarcoma of the stomach. Von Posvic (22) observed that in syphilis of the stomach the administration of antispasmodics causes an unusual discomfort, nausea, and depression.

Albert M. Cole (23) of Indianapolis reports a case of a diagnosis of hourglass stomach by X-ray methods after 4 days' administration of 80 to 120 minims of the tincture of belladonna, which was found to be spasmodic in origin and was due to a diseased appendix.

(24). He also reports a rare case of hourglass stomach with adhesion of the second portion of the duodenum to the cardia, and communicating with it through a perforated ulcer. The condition was diagnosed by observing the process of filling on the screen.

A. F. Tyler (25) reports a case of a jejunal ulcer at the site of a gastroenterostomy performed 4 years ago and the Murphy button having been retained since. He adds the interesting remark that the opaque meal and a course of bismuth subnitrate proved to be of therapeutic value.

Cases of diaphragmatic hernia have been reported by Andrew J. Grant (26) as a result of gun shot wounds. He described a case of a soldier who suffered pain of any description immediately after taking food, and had been treated for many months as a case of gastritis. At an X-ray examination it was found to be a diaphragmatic hernia of the stomach reaching to the level of the third rib. A number of cases following gun shot wounds have been reported in the war literature. In children it occurs congenitally. They are mostly diagnosed by X-ray.

The Duodenum.

The duodenal ulcer—Cole bases the diagnosis of duodenal ulcer by X-ray methods upon the following:

(1)—If normal, the first portion of the duodenum can always be demonstrated on the plate with characteristic shape and smooth outline.

(2)—95% of all duodenal ulcers occur in the first portion.

(3)—A constant defect in the duodenal cap on the plate means a pathological condition, either; (a) ulcer, (b) adhesions due to cholecystitis, or anatomical or accidental abnormalities as pressure from adjacent organs.

(4)—Any duodenal ulcer other than a simple erosion will distort the outline of the barium mass.

(5)—With the exception of the minute recent ulcer, a normal "bulbus duodeni" rules out a chronic indurated, or surgical, ulcer. It however, may have a minute recent perforated ulcer.

Conditions interfering with the demonstrations of the first portions of the duodenal are: (a) pyloric spasms; (b) pressure from adjacent organs such as enlarged and distended gall bladder, enlarged lobes of the liver, etc.; (c) spasms due to chronic appendicitis, obstructive conditions of the intestines.

At times a number of plates must be taken in various positions.

George and Leonard state that an incisura opposite the ulcer is found in the duodenum in cases where the musculature and connective tissue have become involved.

Dr. Wm. J. Mayo (27) published a number of cases of duodenal ulcers of the anterior wall showing merely a pin point defect on the mucosal surface with some mucous membrane heaped upon it. But the amount of callus and induration is, however, much greater, and is therefore shown on the plate under the proper technique. Carman of the Mayo Clinic lays less emphasis upon the direct evidence in duodenal ulcers but employs mainly the indirect evidence based upon a major and minor group of signs. The major group of signs consists of evidence of hyperperistalsis, 6-hour gastric residue, and demonstrable diverticulum of the duodenum. These signs are worth more than 95% in the diagnosis of duodenal ulcers according to Dr. Carman. His group of minor signs includes hypermotility, hypertonus of the stomach, pressure tender points, lagging of bismuth, and deformity of the outline of duodenal cap. He has, however, later on admitted laying chief emphasis upon the direct evidence found in the change of the outline, recognizing it as the most important sign.

Other abnormalities of duodenum—Payne and Thayer (28) report five cases of barium stasis of 6 hours and longer, one case as long as 48 hours which could have easily been interpreted as penetrating ulcer or diverticulum, but proved to be a dilated and patent common duct resulting from a general visceroptosis and relaxation of the ampulla by previous passages of gall stone.

Case (29) likewise calls attention to the fact of barium stasis in the common duct and in the smaller duct of Santorini in certain cases of abnormal dilatation or patency.

W. A. Downes (30) reports a case of giant duodenum in a child four and one-half years old. Weighed 6 lbs. at birth, 29 lbs. on admission to hospital. Had frequent fits of vomiting at intervals. At operation the duodenum was found enlarged to the size of the stomach. The entire length was involved. The enlargement stopped abruptly where the gut passed under the superior mesenteric artery. The condition was diagnosed by X-ray.

Pauchet (31) reports a case of dilatated duodenum with kink and dilatation of the last loop of the ileum. X-ray showed an enlarged duodenum emptying with difficulty. A last loop of ileum emptied after thirty hours. The condition seems to be due to ptosis with traction on mesentery and vessels causing stasis and chronic toxaemia.

Vanderhoof (32), Bloodgood (33) and Kellogg (34) called attention to a condition of angulation of the duodenum due either to mesenteric bands pulling it to the liver, or to an exaggerated visceroptosis, resulting in an obstruction. The clinical picture is vomiting, pain in the right hypochondrium, obstinate constipation with almost colorless stools, and vague toxic symptoms. The roentgenological findings are:

(1)—Marked retention in duodenum.

(2)—Writhing and twisting of the duodenum.

(3)—Reversed peristalsis.

(4)—Tenderness at the angle of Treitz.

(5)—Dilatation of duodenum.

(6)—Some cases will be relieved by change of position.

H. P. Ritchie (35) reviews 75 cases of diverticula discovered roentgenologically, one case being a pseudo diverticulum caused by sacculation of an ulcer scar. He also reports a case of his own where a very large diverticulum was found in close proximity to an ulcer in the first portion of the duodenum.

Gall Bladder.

The technique is the same as for soft tissue work and the value of the plates depends upon their completeness in showing the greatest possible degree of detail. Usually no catharsis is advised as the resulting gas is more confusing than possible fecal concretions. With a small cone pointed obliquely downward parallel to the under surface of the liver, so that the under surface appears as a clear cut line, the gall bladder can usually be detected. Stereoscopic plates may be taken. The plates should show the entire region between the eleventh rib and the crest of the ilium. Along with the examination of the gall bladder, an entire set of plates of the gastro intestinal tract should be made for the demonstration of bands of adhesion, or for other concomitant lesions.

Cholelithiasis: There are three types of stones: (1) calcium stones, they usually show easily; (2) cholesterine; (3) mixed, nucleus of one with coating of the other.

George and Leonard state that with the modern technique, 85-90% of cholelithiasis can be demonstrated on the plate. At times the superimposed plates are matched together thus intensifying whatever evidence cannot be recognized otherwise. Lantern slides made of superimposed roentgen plates may some times accentuate and bring out details. A magnifying glass may aid especially in bringing out the faceted side of a calculus.

Identification of the gall bladder aids materially in detecting calculi. The shadow cast by the long periphery of the stone makes it visible, explaining the fact why only one of a series of plates shows the stone better than all the rest.

Biliary calculi may be confused with: (1) fecal concretions; (2) calcified mesenteric glands; (3) costochondral ossifications; (4) stones in kidney and liver; (5) food in the duodenum or colon at hepatic flexure.

The clinical history with characteristic gall stone symptoms does not always agree with the X-ray diagnosis.

Small Intestine.

Pathological conditions demonstrable by X-ray of the small intestines are: (1) malpositions, either congenital or acquired; (2) functional diseases; (3) organic diseases, ulcer, new growth; (4) displacements, leading to diagnoses of enlarged spleen, kidneys, tumors (extraintestinal), aneurysm or enlarged mesenteric glands.

Exposure must be very short as the intestine is constantly in motion.

Stasis in the small intestine is diagnostic of obstruction, and may lead to the diagnosis of various mechanical causes.

Various intraabdominal herniae may be easily diagnosed. Many reports have been made by various roentgenologists of stasis at the lower end of the ileum due to Lane's (43) kink. The symptomatology of Lane's kink often simulates appendicitis in causing pain and tenderness about the site of the appendix.

Adhesions causing stasis can often be diagnosed but X-ray only must not be relied upon.

Ulcer of the jejunum has been studied by Carman, and was found in a definite percentage of the cases. These occur chiefly at the site of a gastroenterostomy.

Diverticula.

Diverticula in the small intestine are not as common as in the large. Meckel (37) was the first to point out that disturbances in the involution of the omphalomesenteric duct may lead to the formation of a diverticulum near the ileocecal valve. King (36) reports two cases where umbilical tumors were found directly communicating with Meckel's diverticulum.

In new growth of the small intestine there is obstruction, filling defect, and dilatation of the proximal portion where it simulates large intestines. It is differentiated by the characteristic shadow of the valvulae of the intestine. Adhesions obstructing the lumen will simulate new growth, but are most apt to occur in the right lower quadrant in connection with appendicitis and diseases of pelvic organs.

H. G. Sloane (38) after reviewing fifty cases in the literature, reports one of his own of a cystic degeneration of the small intestine diagnosed by X-ray.

Appendicitis.

Pfahler (39) bases the diagnosis of appendicitis upon the following signs:

(1)—Localized tenderness—most valuable sign, elicited either by direct palpation with the gloved hand or by a (distinctor), tenderness may be movable by moving around the appendix. When appendix is invisible palpation is made of the cecum.

(2)—Demonstration of the appendix. Case (40) reported demonstrable appendices in 273 out of 763 cases. George and Gerber (41) visualized it in 7 out of every 10. George and Leonard state that in every case where the lumen of the appendix is not obliterated the barium in buttermilk will fill the appendix and render it visible. They use 90 grams of bismuth or equivalent in barium in a pint of buttermilk. Case emphasized the horizontal position and the taking of front and back plates. Sometimes a retrocecal appendix may be shown by a lateral oblique position.

3—Fixation: Appendix found to be immovable may be bound up by adhesions to various adjacent organs.

4—Position: Normally downward. Where otherwise is probably due to inflammatory products.

5—Kinking or angulations.

6—Constriction and dilatation or irregularity in lumen.

7—Abnormal retention.

8—Incompetency of ileocecal valve seen by opaque substance regurgitating through it into the ileum, signifies reversed peristalsis.

Other roentgenological evidence of pathology in the right lower quadrant is:

1—Enteroliths in cecum, demonstrated in cases by Stamm and Pfahler, gave rise to pain and recurrent diarrhoea.

2—Adhesions of cecum to rectum caused symptoms of chronic constipation with constant desire for rectal expulsion.

3—Carcinoma of cecum—gave roentgenological localized tenderness in addition to the filling defect. It is differentiated from appendiceal abscess by its characteristic serrated outline.

4—Psoas abscess: Simulates chronic appendicitis by its local tenderness, but the normal roentgenological findings lead to an examination of the spinal column and to the diagnosis.

6—Urinary calculus: Roentgenological findings usually determine the diagnosis.

Hertz (42) recommends that a screen examination of the appendix should always be made before the opaque substance is administered to determine the presence of fecal concretions.

The Large Intestine.

For the examination of the normal colon and for stasis the usual meal is employed, but for particular colon pathology the enema is used. The opaque enema is passed into the large intestine through a soft rectal tube inserted about two inches. The container should never be higher than 3 feet above the patient. Following are the conditions diagnosed:

1—Constipation: Bismuth is found after 48 or even 96 hours after the meal. The diagnosis of the chronic or spastic colon can easily be made by the appearance of the shadow. Where stasis is due to mechanical obstructions the cause can usually be located.

2—New growths: Appear as distinct and permanent filling defects usually annular or funnel-shaped with proximal dilatation. Swartz observed that frequently a growth will not offer obstruction to the meal but will obstruct the enema. He explains this phemonemon by the fact that the growth has adapted itself to the natural direction of the stools and became funnelized.

The fluoroscopic observation is important, as tumors can often be palpated at the place of obstruction to the enema. Care must be taken not to confuse with some normal pressure defects due to spine or diverticula.

3—Adhesions: Produce effects similar to those of new growths and must be differentiated by the history. The hepatic flexure is one of the most frequent locations for such adhesions resulting either from gall bladder lesions, or from the congenital Jackson's (44) membrane. Albert M. Cole (45) reports a case of pericolitis sinistra or a band of adhesion at the splenic flexure corresponding to the Jackson's membrane. The appendix region is another favorite location for bands. Postoperative adhesions in pelvic diseases may cause distortion of normal outline and obstruction.

4—Displacements: May be caused by enlarged intraabdominal organs or tumor. A pneumoperitoneum will often help to diagnose.

5—Colitis: Mucous: Can be demonstrated by a coating of bismuth remaining after the passage of the meal, the coating adhering to the mucus on the walls.

The ulcerative colitis is demonstrated similarly.

Lawrason Brown and Homer L. Simpson (46) report analyses of 175 cases examined by X-ray for tuberculosis colitis. The chief criteria are hypermotility and filling defects. These conditions could not be diagnosed otherwise. Of the 175 cases 44 were positive, 28 of the 44 were operated upon and in 27 the diagnoses were confirmed.

6—Diverticulitis: By the aid of X-ray this condition has been diagnosed quite commonly. Multiple diverticulitis is found in the descending colon and sigmoid, shadows occuring in groups and under the screen can be manipulated to show their relation to the wall of the bowel. They usually retain the opaque substance for 4-5 days. Case reports one with retention of 16 days. Diverticula will often cause difficult problems to the surgeon. George F. Straub (47) reports a case where a diverticulum of the descending colon caused pressure upon the left ureter and produced intermittent hydronephrosis, the patient emptying a large amount of urine after the evacuation of the diverticulum which took place regularly every 5 days. Straub diagnosed the condition by the opaque enema.

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Treatment of Trachoma.

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Trachoma is a contagious and destructive disease of the eye, characterized by the formation of nodular growths in the conjunctiva that in time disappear leaving scars.

Complications involving the cornea and deeper structures of the eye are common.

The pathology of trachoma is largely that of the follicle. Formed as it is in the adenoid or lymphoid structures of the conjunctiva, it has a more or less definite connective tissue capsule, a stroma and lymphoid elements with a surrounding network of blood vessels. A low grade inflammation is present in the follicle and surrounding tissue. This nodule terminates by absorption and replacement by scar tissue, or by rupture, ulceration, and scar. The follicle being within the conjunctiva and backed by the tarsal cartilage on the upper lid and the firm connective tissue on the lower lid, exerts a profound mechanical effect on the cornea and bulbar conjunctiva resulting in destruction of the epithelium and invasion of the corneal structures with pathogenic organisms always present in the eye. The constant scrubbing of this ulcer by the many trachoma follicles causes a rapid and extensive spreading of the same and involvement of the deeper structures. Pannus, the vascular keratitis causing thickening of the bulbar conjunctiva with its new blood vessels traveling on and over the cornea is, no doubt a mechanical result of the nodes.

MacCallan of the Egyptian Opthalmic Hospital Service divides this disease into four stages.

1. Slight roughness of the conjunctiva. Very little or no infiltration, little or no discharge and that of a mucous character. Sago grain islands, usually in the fornix.

2. The stage of granulation. May be papillary, gelatinous, or sago like, blending into raspberry formation.

3. Beginning of scar formation, in islands and streaks, many ulcers large and small due to rupture of follicles and pinching of scar.

4. Complete scar stage. Conjunctiva smooth and largely replaced by scar tissue. Beginning distortion of the tarsus.

However, the various stages blend and mix until but two distinct conditions stand out, that of follicles and that of scar.

Treatment.

Keep in mind "the ultimate end of trachoma is scar.'

Medical

The drugs used on this disease past and present are without number. They come under three general classifications.

1. Those directed at the follicle itself, the so called specific medication. There is no drug that has stood the test of time and proved it had any selective action on the trachoma follicle.

2. Antiseptics, as mercury, silver salts, dichloramine T, iodoform and the borates. Their value is doubtful. More than likely they prevent the development of other microorganisms within the eye, but little real effect can be seen on the trachoma itself.

3. Caustics and drugs exerting a mechanical effect.

Of the caustics, copper sulphate and silver nitrate are the most popular. Carbon dioxide snow has many strong advocates. There are many other drugs of this class, but their effect is about the same. They cause actual destruction of tissue, ulceration and slough, followed by scar tissue. They are in a large measure under the control of the operator.

Those mechanically affecting the disease process depend largely upon a sandpapering effect. The oldest and one of the most popular is calomel and cane sugar, equal parts, to be rubbed into the follicles vigorously. The result is trauma, slough and scar tissue. It is doubtful if the calomel adds anything to the treatment.

X-Ray and Radium.

These have been used to a certain extent, but so far no one has recognized any definite effect on the trachoma follicles, other than their destruction and formation of scar tissue. The dosage in either method cannot be controlled sufficiently to make them a treatment of choice.

Surgical.

Two general classes:

1. Methods to produce scars slowly and with little reaction. Rolling, expressing, curetting, rasping, brushing, sand papering,

abcission and the electric needle are all used. The object being to squeeze out or scrape off the top of the follicle, thus producing ulceration and the formation of scar. Clipping small pieces with the scissors has the same object in view. The Knapp roller, from its mechanical construction is, perhaps, the most satisfactory, the rollers going well up into the fornix, the place commonly neglected. Often any or all of the above treatments are followed by application of some caustic. Strong solution of bichloride of mercury is one of the most popular. They all bring about the desired result, scar, and are more or less under the control of the operator.

2. Producing scar quickly, the Heisrath or Kuhnt operation.

The removal of a strip of infiltrated fornix, the removal of the mucous membrane over the tarsus, removal of tarsus or some combination of the three.

The removal of the mucous membrane in the fornix with a removal of the tarsus is the most radical and in my experience the most effective method of dealing with any advanced case of trachoma. The relief from pain is accomplished within a few hours. Ulcers, where present, are controlled more quickly, the reaction is not severe, and recurrence is far less common. Grafts of mucous membrane from the patient or from an animal in the above operation are difficult to secure and hard to manipulate with satisfaction. If they do not slough a smooth even scar results. I doubt if any of the mucous cells survive.

Conclusion.

There is no drug or chemical or light ray that has any selective action on the trachoma follicle.

All treatment of trachoma depends on the formation of scar tissue for a favorable result.

Scar can be formed by caustics or mechanical means and be in a measure under the control of the operator. It is a slow, painful procedure and is often terminated by the patient before permanent results are obtained.

The surgical removal of the conjunctiva with the tarsus is the most effective method, producing scar quickly and under absolute control. It gives greater comfort to the patient and results in far fewer complications to the eyeball. It is equally as effective with or without mucous grafts.

Some Commonly Overlooked Foci of Infection.

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Although it may perhaps be regarded by some as an overworked topic, permit me to discuss the subject of focal infection from a point of view which, it is hoped, will be suggestive and helpful.

It is unnecessary to argue the importance of focal infections in their bearing upon such important conditions as arthritis, cardiac and renal disease, arterio-capillary fibrosis, gastric ulcer, cholecystitis, appendicitis, neuritis and other lesions.

While our enthusiasm in finding foci whose removal may have a beneficial effect upon these lesions may have led us to "slaughter" tonsils and extract teeth to such an extent that many capable men of a conservative disposition have voiced their protests, it is none the less true that there are many of these foci which are real sources of danger but which are often overlooked. It is to some of these commonly overlooked foci which your attention is called.

It may perhaps be superfluous to remark that often foci of infection are "overlooked" because no foci are suspected and therefore not looked for. Every modern clinician makes it a point to look for these foci in cases where there are evident lesions which are known to be associated with focal infections. For example, cases of arthritis, neuritis, heart and kidney cases all suggest at once the need of search for foci which may possibly be important causative factors.

However, as has frequently come under my observation, and that of a number of colleagues, patients present themselves with no definite symptoms pointing to any particular lesion, stating that for some weeks or months, often following an attack of influenza, a sore throat or a hard cold, they have felt run down, had no "pep", and fatigued easily, found it difficult to maintain an interest in their work, etc. It has been surprising how frequently these patients have, on careful examination, been found to carry focal infections, the removal of which sufficed to clear up their symptoms, and enabled them to resume their work with their customary vigor.

It may be put down as a good rule to follow that all cases which present these indefinite symptoms should be carefully investigated with a view to discovering possible focal infections.

The important part which infected tonsils play in focal infections is too well understood by all to require discussion. It may be true that many of these vestigial remains are removed by enthusiastic followers of the focal infection idea, when there is really no definite evidence of infection present. It is certain that many of them are removed badly, as later evidence of haggled pillars and stumps left behind, shows.

The point to be emphasized in this connection, however, is this: The history of a tonsillectomy having been performed does not rule out the presence of infected tonsillar tissue. It is a common occurrence to find stumps and even whole tonsils, which were supposed to have been removed. It is quite possible to overlook a good sized stump of tonsillar tissue when doing a tonsillectomy if the field is not kept free from blood, and carefully inspected after operation. In other cases, the so-called submerged tonsil has had its top cut off and the remaining mass is concealed by the pillars so that unless the pillars are retracted in making the examination the offender will be overlooked.

Mere inspection of the throat is not sufficient to enable one to be positive there is no infected tonsillar tissue present. The pillars should always be retracted with a blunt retractor so as to get a full view of the tonsils, and note the possible presence of infected crypts hidden from view.

Associated with tonsillar infections, infected adenoids are often found. It is a common mistake to assume that there are no adenoids present if the patient is not a mouth breather having the usual adenoid face, etc. Adenoid masses are often found in adults, who have no obstruction to breathing, and are therefore not suspected of having this form of focal infection. Small infected adenoids are very frequently the original source of trouble in middle ear infections, and are not discovered without the use of the throat mirror or preferably the naso-pharyngoscope. The infected secretions keep the pharyngeal openings of the Eustachian tubes bathed in muco-pus which is the source of the post nasal discharge which annoys the patient.

One of the most commonly neglected conditions and one which is frequently overlooked as a source of focal infection is chronic otitis media. It is strange, in view of the fact that a chronic middle ear infection is well known to be a grave source of danger from mastoid and intracranial involvements, that so many of these cases are left to shift for themselves, with little done except to keep the discharge cleaned out of the external ear. There are great numbers of these cases needing radical operation as a matter of safety; but it should not be forgotten that the focus found in a chronically infected ear is capable of producing the same results as a focus found elsewhere. No better evidence of this in these cases is needed than to note the improvement in general health which follows the radical tympano-mastoid exenteration.

It ought to be unnecessary to refer to the importance of a careful examination of the teeth in our search for focal infection; but how often they are passed over with a cursory glance. No decayed teeth are observed, and no pronounced evidences of pyorrhea are present. The patient states that he has seen a dentist within a few months, and possibly has had some teeth crowned.

Nothing positive can be stated as to the absence of dental infection without the evidence presented by skiagraphs, properly taken and interpreted by a competent dentist, who should always take part in the search for focal infection if the work is to be at all thorough.

The most frequently overlooked source of focal infection is in the nasal accessory sinuses.

Consider the labyrinthine structure of the ethmoid cells and the way they are exposed to infection constantly. Bear in mind how readily the infection from an acute cold may extend into the antrum, the frontal sinus and the sphenoid and how repeated insults to the mucous linings of these cavities results in a chronic hyperplastic process which interferes with drainage and tends to retain the infection. Also remember how few people are free from postnasal discharges, which they call "catarrh" and consider a necessary evil. All this emphasizes the fact that no part of the anatomy deserves such careful investigation in our search for focal infection as the nasal cavities.

Here as elsewhere negative findings based upon superficial examination are a great source of error.

A thorough rhinoscopy, after the tissues have been shrunken with cocain and adrenalin is required. The naso-pharyngoscope often shows the presence of pus which is not visible by ordinary methods of examination. Examination after suction with vacuum apparatus may bring into view pus not previously observed.

The absence of pus after these methods of investigation does not settle the matter. Small foci are often found within the hyperplastic tissues, and may not be detected until at the time of operation.

X-Ray findings are often deceptive. Skiagraphs are valuable as a means of determining the anatomical conditions, but when negative cannot be depended upon to rule out absolutely the presence of infection in the sinuses. On several occasions I have found it advisable to make an exploratory search for sinus infection, and have been rewarded by finding the source of trouble after all other methods failed.

For the purpose of illustrating the points which have been brought out in the foregoing I have selected some cases from my records.

Case 1. Male, age 39. Had influenza one year ago. Had no "pep" since. Five weeks ago had sore throat. Felt very weak since then. Has rheumatic pains in shoulders and arms. Temporal headaches. Digestive disturbances. Sleeps poorly. Tonsils not visible by ordinary examination. With pillars retracted medium sized submerged tonsils, with infected crypts are seen. Tonsils enucleated under local anaesthetic. Rapid recovery of strength and disappearance of rheumatic pains.

Case 2. Female, age 20. Had severe cold one month ago. One week ago developed acute otitis media, which had been treated by instillations of peroxide. When seen had acute mastoiditis in right ear, and otitis media in left ear. Mastoidectomy done on right ear. Large infected adenoid removed. Left ear continued to discharge in spite of free incision of membrana tympani, and mastoiditis developed in left ear. Mastoidectomy done. Recovery rapid and uneventful. Plainly a case where the infection was held in the adenoid mass, with extension to the middle ears.

Case 3. Female, age 60. Had chronic otitis both ears since childhood. For past year subject to frequent attacks of tic douloureux. Tender right frontal sinus and antrum. Skiagraphs show involvement right frontal sinus and antrum, and left mastoid. Teeth negative. Operation: Radical frontal sinus and intranasal drainage antrum. Some relief of pain. Ten days later radical left mastoidectomy. Right ear treated locally, and autogenous vaccine used. Complete epidermization in about three months. No further attacks of tic since mastoid operation. Right ear dry.

Case 4. Female, age 25. Usual fatigue symptoms. Severe neuralgic pains about right ear. Examination ear shows no indications of inflammation. X-Ray negative. Had antrum infection on left side with operation several years ago. Had unerupted molar, which was extracted, with no effect on neuralgia. Ordinary methods of examination threw no suspicion on right antrum, but after several weeks of severe pain, with fluctuating temperature, the right antrum was explored. Large amounts of polypoid material and debris were found. After drainage a marked improvement was noted.

Case 5. Male, age 49. Chronic postnasal discharge. Has hyperplastic ethmoiditis. No suspicion attached to antra. X-Ray examination of sinuses shows one antrum with dense shadow, afterward found to be from pus.

Case 6. Female, age 39. History influenza one year previously. Subject to severe headaches, frontal and vertical. Takes cold easily. Tired all the time, and losing weight. Eyes tire readily. Worn lenses for some time. Digestion poor. Nervous. Had impacted molar removed a month before with no improvement in general condition. Examination nose shows deflected septum, chronic ethmoiditis, with pus in middle fossae and attic observed by nasopharyngoscope. Operation: Septum resection, ethmoid exenteration and drainage of antrum. Marked improvement in health, increase in weight and nervous stability followed within a few weeks.

Case 7. Male, age 39. Asthmatic. Has had all sorts of medical treatment and relies on asthmatic powders to see him through attacks. Has never had a nasal examination. Examination shows chronic ethmoiditis with polyp formation. Radical ethmoid and sphenoid drainage brought relief from asthma, which only shows up in slight form when he is around horses a great deal.

Case 8. Female, age 13. Been subject to colds since attack of scarlatina 9 months before. Frail appearing, under weight and constantly tired. Discharge from nose, especially right side, constantly. Had been taken to a specialist for examination who did a tonsillectomy, but did not examine nose. Superficial examination showed suppurating ethmoiditis. Operation, under local anaesthesia. Evacuation large amount of pus from ethmoid and antrum. Rapid recovery.

Case 9. Male, age 8. Measles 2 years before, with otitis media which has persisted since. Had tonsil-adenectomy performed 1 year ago. Discharge from ear is foul at times. Child undersized and listless; poor appetite. Radical operation performed. Whole mastoid was a shell filled with a necrotic mass. Dura was exposed, with localized pachymeningitis. Urine examination showed profound acidosis. Complete healing and epidermization in 8 weeks. Hears ordinary conversation at 6 feet. Patient rugged and active, showing marked gain in weight.

Summary.

Focal infections associated with arthritis, cardiac and renal disease, arterio-capillary fibrosis, gastric ulcer, cholecystitis, appendicitis, neuritis and other lesions are of such importance that careful search should be made for such foci.

Fatigue symptoms, lack of energy and interest in work, with or without definite arthritic, neuralgic or muscular pains should suggest the possible existence of focal infections.

Infected tonsils are often overlooked either because submerged, or failure to retract the pillars to look for infected crypts which are covered up. History of tonsillectomy should not be taken as evidence that there is no diseased tonsillar tissue present. The tonsillar fossae should be examined in every case.

Infected adenoids are a frequent source of trouble. They may be present without any symptoms of obstructed breathing, and are not infrequently found in adults.

Chronic ear infections are a potent source of focal infection, aside from the danger which they carry in setting up possible mastoid and intracranial infections. Every running ear is potentially a menace to health and life. The radical operation is often needed.

Teeth should be examined in every case, and the expert services of the dentist should be called in in examining the oral cavity, and in making dental skiagraphs.

The accessory sinuses of the nose as sources of focal infection are more frequently overlooked than any other. This is due partly to a failure to appreciate their importance, and partly to very superficial examinations. Post nasal discharges, frequent colds and obstructed breathing suggest the need of careful examination of the nose and sinuses. Failure to find active suppuration does not rule out focal infection of hyperplastic ethmoids, which may contain foci which are not visible, and do not drain.

X-ray findings are not always conclusive. They give the topography, but when negative do not prove the absence of sinus infection, as has been shown by exploratory operations.

Where general symptoms point to focal infections, in the absence of other positive findings, exploratory opening of the accessory sinuses is indicated.

Post-Operative Complications of Acute Mastoiditis.*

R. A. Peterson, M. D., Sioux City, Ia.

The aim of presenting this report has been to briefly consider the incidence and character of various post-operative complications of sixty-seven cases of acute mastoiditis observed with Dr. Naftzger and Dr. Gittins between Oct. 1st, 1919, and July 1st, 1920. As in the preceding two years, these complications have been varied in type and severity suggesting a close relationship between their occurrence and the increased virulence of the causative organism observed during the period. Streptococci of the hemolytic group have been predominating invaders with pneumococci a poor second. All of the more severe complications were observed in the acute fulminating cases typical of a hemolytic streptococcus infection.

Thirty-four, or roughly fifty per cent of these cases, presented no unusual occurrence during their period of convalescence. The remaining thirty-three cases are classified in various groups as to the type of complication. This will necessitate some overlapping as a number of cases presented more than a single post-operative complication worthy to be noted .

One of the most common post-operative incidents was a reinfection of the middle ear following an acute or flareup of a chronic nasal or accessory sinus infection. Such reinfections were observed in nine cases and were manifested by a discharge through the canal which had previously been dry and an increased discharge from the mastoid wound. A number of these cases presented the discomfort or varying degrees of pain, temperature and malaise usually associated with an acute middle ear infection. Several, however, noted only the discharge. These reinfections usually came on about the end of the second or during the third week of convalescence, although two returned with wet canals the seventh and fourteenth weeks respectively after being discharged as well. This secondary infection was uniformly mild and as a rule subsided in a few days.

Three cases were marked by a very sluggish formation of granulation tissue. After various stimulating measures had been tried, secondary currettage of the mastoid wound was done to promote more vigorous healing.

Involvement of the lateral sinus was noted in three cases. One of these had, on the thirteenth day, a spontaneous rupture of the lateral sinus while lying on the dressing table with wound exposed after removal of packs. A child of three years had a lateral sinus phlebitis associated with an acute hemorrhagic nephritis. The third case presented a complete thrombophlebitis of the lateral sinus from the jugular bulb to well posterior to the knee of the sinus toward the torcula when the lateral sinus was explored on the tenth day following mastoidectomy. At the time of the mastoid operation in these three cases the lateral sinus was freely exposed but in none did the patient's preoperative symptoms or the appearance of the lateral sinus justify further exploration at that time.

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*Read before Sioux Valley Eye and Ear Academy, Omaha, July 14, 1920.

Two brain abscesses, one temporo-sphenoidal and one cerebellar, developed and were drained three months and three weeks respectively following the initial aural infection. The patient with the temporo-sphenoidal abscess developed an interesting papillitis of the optic nerve with a slight divergent squint, following drainage. Both of these optic conditions subsided after drainage although there is still a faulty convergence present four months after the operation. The cerebellar case presented no ocular findings of any moment either before or after drainage.

Acute otitis media involving the opposite ear developed in four cases. Three of these developed pronounced mastoid symptoms calling for operative interference on the sixth, eleventh and twelfth days respectively following their first mastoidectomy. No acute nasal or tonsillar infection was noted in these cases preceding involvement of the second ear.

Various types of cellulitis were met with in four cases. One case developed a severe inflammatory edema seven hours after operation necessitating removal of all sutures to relieve the pain and tension in the tissues surrounding the mastoid wound. Another had an acute cellulitis of the scalp on the twelfth day following operation. Two other cases had extensive cellulitis extending from the tip of the mastoid downward superficial to the vaginal fascia of the neck. One of these cases, a bilateral mastoidectomy, was very extensive, extending from the tips of both mastoids through the deeper layer of the superficial fascia of both anterior and part of both posterior triangles of the neck.

Probably the most interesting complication observed was a suppurative inflammation of both lateral lobes of the thyroid gland appearing in a young male adult two weeks after simple mastoidectomy. The cervical tissues were markedly swollen necessitating bilateral drainage for the twofold purpose of relieving the dyspnoea and dysphagia and evacuating the pus. Two weeks after the thyroid was drained, the patient developed an acute mastoiditis in the opposite ear which was drained. Following this operation an acute exacerbation of the suppurative involvement of the thyroid occurred. At the time of discharge from observation six weeks later there were no symptoms or signs to demonstrate derangement of the thyroid secretion.

Four cases of erysipelas occurred in this series, two of which exhibited a second attack. These patients were patients of slow convalescence from their mastoid involvement and the erysipelas seemed to hasten resolution markedly. Once the acute phase of the infection was passed, these formerly slow healing mastoid wounds filled in rapidly with firm healthy granulation tissue.

Although a number of cases displayed a slight acetonuria following operation, clinical acidosis was noted in only four cases. All of these cases had renal lesions of various types. Three cases were in children, one of which had a subacute nephritis, another acute hemorrhagic nephritis and the third, a boy of fourteen, acute nephritis associated with pansinusitis. The fourth member of this group was a female patient of forty-eight years of age who had a severe acidosis accompanying chronic nephritis, diabetes and bilateral Highmorian empyema.

There were no deaths in this series of cases. This emphasizes the fact that acute mastoiditis even if severely complicated is rarely fatal. In the greater proportion of cases, the complications are localized in the domain of the head specialist unless some other part of the body has its resistance lowered by a definite pathological process.

What Are Vitamines? Answered by What They Do.

"What are vitamines?"

This is a question asked repeatedly since the importance of these compounds in foods has come into prominence, but no definite answer has yet been given. Investigations by scientists at universities, agricultural experiment stations, and institutions for medical research have revealed much information regarding the function of vitamines in body maintenance and building, and the parts of the various foods in which they are to be found.

That vitamines are compounds absolutely essential in the food, in order to maintain the weight of the body and produce growth, has been definitely proved. The lack of vitamines causes deficiency diseases, so named because they are due to lack of something in the diet. Vitamines are present and are needed in such small quantities in the food that chemists have not yet been able to isolate them from the many other compounds which are in foods. For this reason, we know very little of the actual character of vitamines.

Three Types of Vitamines

According to a statement by Dr. Carl O. Johns, formerly in charge of nutrition work in the bureau of chemistry, United States Department of Agriculture, vitamines have been classified into three different types depending upon the functions which they have in promoting well-being and growth.

The first type is known as water-solution vitamines, and these are necessary in order to obtain growth from food. Lack of these causes beri-beri, which manifests itself by disease of the nervous system and by other symptoms. These vitamines are found in seeds, in green plants, in certain bulbs and fleshy roots and fruits, and in milk and eggs, as well as in certain organs in the animal body. The seeds referred to include beans, nuts, and the various cereal grains. When cereals are very highly milled in order to obtain a very fine white flour, a large part of the vitamines may be removed. Vitamines are also lost when rice is polished in order to remove the outer layers which contain most of the vitamines. It is for this reason that a diet consisting mainly of polished rice may cause beri-beri, while unpolished rice does not cause this disease.

The second type is known as fat-soluable vitamines, and these are found in butter, eggs, milk, and in certain animal organs such as the heart, kidneys, and liver, and to some extent in other fats as well as in green vegetables. They also exist in smaller quantities in certain seeds. When fat-soluble vitamines are absent from the diet, animals and man are subject to a disease of the eyes, which appears to be related to xerophthalmia and which, if prolonged, may produce blindness.

Best Source in Vegetables

The third type is known as antiscorbutic vitamines—that is, those which prevent scurvy, which manifests itself by disease of the bones as well as in other ways. These vitamines are found in oranges, grapefruit, lemons, and other citrus fruits, and in green vegetables, such as tomatoes, spinach, and lettuce, and in eggs and raw milk. The dying of vegetables frequently destroys the activity of the antiscorbutic vitamines. The best source of vitamines is in the leafy parts of vegetables, and this is one of the reasons why spinach, lettuce, and cabbage are valuable foods.—Weekly News Letter.

Letter to the Profession from Division of Venereal Diseases.

Lincoln, Neb., Dec. 1, 1920.

"Doctor:—

The prevalence and seriousness of syphilis warrants our continually looking for this disease and the earlier we recognize and get the condition under treatment the better. It is worth while to nose around and temporarily ignore the lesser ailment that may be present until we have assured ourselves that syphilis is neither an active nor a latent factor. Some apparently easily recognized condition may deceive one as for example: A patient developed a successive crop of 'boils' which the casual observer might readily fail to recognize as pustular syphiloderm which this proved to be, though somewhat atypical.

"A boy recently came under the observation of a competent physician who, in the course of his examination, ascertained the condition of the eye grounds and found a primary optic atrophy. The physician also obtained a specimen of the boy's blood and had a Wassermann test made in a reliable laboratory the result proving to be positive—verification as to etiology in this case—but the boy's father refused to accept a diagnosis of syphilis so went to another physican, who informed the father that the boy did not have syphilis and stated further 'that if he were syphilitic his body would be covered with chancres as a result of the medicine which had been administered'. Startling isn't it? Yes! However a later blood test proved positive and a specimen of the father's blood was likewise positive. The first physician exhibited training by his actions while the second physician in this case was most unfortunate.

"Let's put our shoulder to the wheel with the determination that spells success.

Respectfully,
P. H. Bartholomew,
A. A. Surgeon, U. S. P. H. S."

Whereas, Divine Providence has called hence Dr. Joseph M. Aikin, one who has been a member of the Committee on Journal and Publication of the Nebraska State Medical Association from its organization, therefore, Be it resolved—by the Committee on Journal and Publication

That in his passing we have lost one whose ideals, industry and loyalty to his work were so great that as a committee and as members of our Medical Association, we lament a loss that cannot be easily filled, and, Be it resolved—

That though the grief and loss is great to us in our professional work and as members of the profession, yet it is greater in the loss of one who was our personal friend, our closely associated colleague, our advisor and counsellor, and, Be it resolved—

That we realize that though he will be in person absent from our meetings, his past influence will be a continual inspiration to the same unselfish, loyal service that will ever make the early development of the Journal sacred to his memory, and, Be it resolved—

That we publish a copy of these resolutions in the Journal which our friend loved so well and that we spread them upon the records of the Nebraska State Medical Association, and that a copy be sent to his family.

F. A. Long
W. O. Bridges
B. F. Bailey.

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THE JOURNAL

Volume V of the Nebraska State Medical Journal closed with the December number. Readers of the Journal need not be told that in scientific worth the Journal for 1920 marked a great step in advance. With the continued and ever increasing interest of the profession in the Journal it is bound to become one of the foremost State Medical Journals. If the readers could know all the nice things that are said about the Journal by physicians and journalists from other States, as those in charge hear them, they would agree that there is room only for optimism.

The passing, in November, of the Managing Editor, Dr. J. M. Aikin, was a real tragedy to the Journal for there is no one fully qualified at once to take up the work in all its phases. The matter of succession has been temporarily arranged by Miss Anne S. Erixon, secretary to the Committee on Journal and Publication, taking the duties of Business Manager, and the Committee assuming editorial responsibility pending the next annual State Association meeting in May.

The financial status of the Journal Fund may in a general way be said to be at least on a par with the preceding year, possibly slightly better. Receipts from advertisers and memberships are somewhat larger, but the expenses of the Journal have also increased. Just how much the present period of depression and the loss of the Managing Editor may adversely affect the finances of the Journal in the immediate future cannot be told as this is being written, but in any event the Journal Fund is in condition to care for the demands likely to be made upon it before the annual meeting of the State Association.

More than ever before, the Committee needs and desires the cooperation and assistance of the profession.

Change of Publication Date.

For the benefit of the advertising patrons of the Nebraska State Medical Journal the date of publication has, with the January number been changed to the first of the month.

By The Board.

Dr. R. B. Adams, Secretary-Treasurer.

Dr. R. B. Adams, of Lincoln, has been appointed Secretary-Treasurer of the Nebraska State Medical Association to succeed the late Dr. J. M. Aikin. Dr. Adams is a graduate of Rush Medical College 1907, has been in practice about twelve years, and is thought by those most intimately associated with him to be peculiarly fitted for the position to which he has been appointed.

Looking Forward.

To those of us who have practised medicine for about twenty years or thereabout, the coming of each New Year causes us to stop and review the past and look forward hopefully to the future.

So soon after the war; in this turmoil of unrest and uncertainty, no beginning seems so fraught with possibilities as does this coming year. Medicine is becoming more of a science, more exact, and superior technical training seems to be the necessity of the hour. The days of the general practitioner are apparently numbered. Doctors are becoming specialists; technicians along very restricted lines. But as we pause to look back, have we any reason to be ashamed of the clinician of the past? What wonders he accomplished with the smallness of his training and the scarcity of tools. Out of little he was able to accomplish much. The old doctor could go into the sick room and without aid of the laboratory, electrocardiograph machines, metabolism machines, the X-ray and various electric machines make, in the greater percentage of cases, a correct diagnosis and as to treatment: Sometimes I wonder if in their instinctive way and with their superior knowledge of the physiological action of drugs, they did not do better than most of us. On the golf links, a man of medium training with a multiplicity of tools is a "dub" and I wonder if the average physician would not do better to use fewer tools and use them understandingly and well than do as we are now doing. The doctor of yesterday has no reason to turn over in his grave from envy but he might from the knowledge that our egotistical science leads us into more errors than his humane instincts.

With the passing of the old-fashioned treator of ills is going the larger element of humanity that was present in the administration to the sick. The necessary training in many of our hospitals, especially our County Hospitals, is of such a character that it makes of the scholar not a true healer of the sick but a mere scientific automaton.

And yet through the rifts of the clouds we are doing things. Many new discoveries in preventive medicine; in the bacteriological etiology of diseases and in the domain of surgery, X-ray and radium has mitigated suffering and lengthened our span of life.

While we are progressing and still know of our failings, why not pause at this beginning of a new era and try to combine with our scientific understanding a little of the old doctor's humanitarian instinct. If this can be done and be done quickly and properly, we need never feel ashamed of the progress of our noble art and truly will the "isms" and "scisms" of the present day perish and a proper co-ordination of the art of healing the sick will be brought about that will mean alike good health and a longer span of life to mankind and a kinder and better and more reverential attitude of the laity toward the doctor.

B. W. C.

Internal Urinary Antisepsis.

To those who have had to deal with chronic inflammatory conditions of the urinary tract, the lack and the need of a really efficient drug for combating these infections is only too apparent. A survey of the medical literature pertaining to urinary antisepsis reveals a surprising absence of sound experimental or clinical proof of the fitness of any of the several drugs at present in common use for this purpose. It is not uncommon for textbooks to recommend glibly the use of "some urinary antiseptic", yet none of these drugs, with the exception of urotropin, has ever been proved to be of appreciable value, and even this latter has its very definite limitations. Authoritative writers on this subject frankly confess that in the treatment of infections of the upper urinary tract, in addition to general hygienic measures, forced water, and elimination of foci of infection, one has a choice of two measures, the administration either of urotropin or of alkalies. Pelvic lavage with silver nitrate through a ureteral catheter is advisable in chronic cases. Beyond these simple and relatively inefficient measures we are helpless.

The term "cystitis" is, in such an overwhelming majority of cases, merely an indication of some accessary cause of infection, that the condition may be rather considered a symptom than a diagnosis. The uselessness of treating pyuria with bladder irrigations, when the real, underlying or accessary cause is prostatic retention, stone, tumor, diverticulum, or renal infection, is apparent. Thus, before any plan of treatment is adopted, we must have a complete and accurate diagnosis. No conceivable medication could relieve the symptoms of "cystitis" produced by a bladder stone or tumor.

Ninety percent of the infections of the upper urinary tract are due to the colon bacillus. The relative frequency of the colon bacillus, and the stubbornness of such infections, is in keeping with the hardiness which this organism displays (as contrasted with the staphylococcus) when tested against various antiseptics, using urine as culture medium.

As to the route of invasion in renal infection, volumes have been written to prove that the organisms enter via the blood stream, or that they ascend via the ureteral lymphatics, or via the lumen of the ureter; and the question still remains open. It would seem likely that any or all of these routes are possible. Regardless of the path of infection, there are certain well-defined lines of treatment. General measures should consist of rest in bed, with free diuresis and catharsis, and a search for and elimination of foci of infection. A complete urological examination is essential to rule out any accessary cause for infection, such as retained urine in the bladder due to prostate or stricture or diverticulum, or retained urine in the kidney pelvis due to ureteral stricture or hydronephrosis. When we have assured ourselves that there is free drainage of the entire urinary tract, and that there is no stone, tumor or tuberculosis, or other accessary cause for persistent infection, the weakest point of our treatment is approached, the administration of internal urinary antiseptics.

The drug ideally adapted for this purpose must be chemically stable and relatively non-toxic and non-irritating, must be antiseptic in high dilution in urine of any reaction, and must be eliminated unchanged in high percentage by the kidney. Clinically there is no such drug known. Laboratory investigations along this line are being carried on by Dr. Edwin Davis, the recent results of which are of experimental interest, and give promise of possible clinical value. After a study of between 400 and 500 compounds, about half of which are related to phenolsulphonephthalein and the remainder of which are various anilin dyes, it has been possible to select an acridin dye which experimentally possesses all of the required properties of the ideal internal urinary antiseptic. This dye, administered orally, is non-toxic in adequate dosage, and is eliminated unchanged in high percentage in the urine, rendering that medium, for a definite period of time, an unfit culture medium not only for the staphylococcus, but for the colon bacillus as well. Administration to date has been only to normal individuals in an experimental way. While it is highly improbable that this dye will turn out to be clinically practical, yet this result is of distinct value experimentally, in that it demonstrates the possibilities of specific chemotherapy in this field, and gives encouragement for further investigations along the same lines.

What We Know About Cancer.

The American Society for the Control of Cancer, together with the Council on National Health and Public Instruction of the American Medical Association, have had a committee prepare a handbook for the medical profession to be circulated among its membership in the United States. The important facts about cancer in general are given as well as the simplest means of recognizing it in the situations where it most often occurs. In this book we note much of interest and importance, and take the liberty of quoting freely from it.

As is well known, the American Society for the Control of Cancer has instituted a campaign for the purpose of educating the public as to what cancer really is. It is emphasized that this has been the primary and most necessary step in the campaign to reduce the very great mortality of the disease. The knowledge that cancer, if taken early, can be cured by now well-known methods, is being disseminated among the public; every effort is being made in this direction. Although we are all looking hopefully towards the day when the real cause for, and the cure of cancer by simple means is known; to date no drug has been discovered which by internal administration or by injection, has been proven curative. Caustic pastes, fake "cancer cures," herb and Indian doctors, Christian Science, increase enormously the mortality from cancer. The patient is encouraged to expect relief until his money is exhausted and his disease too far advanced for cure by operation, and he drifts finally to a charity hospital where his suffering can be controlled only by opiates, while he dies a lingering death. The public should be impressed with these facts. They should be taught that the one factor of greatest importance in the successful control of the disease is its early diagnosis; also, that when symptoms are present which are suggestive of cancer but insufficient for a positive diagnosis, that diagnosis by exploratory operation is the method which promises the greatest and most immediate reduction of the mortality of cancer. To cut into cancer tissue "in situ" undoubtedly adds to the danger of dissemination of the disease; the public knows in a confused way that cancer tissue must not be cut and this influences many against exploratory operative measures. The book discusses the safest procedure to be followed in doubtful or definite cases of cancer in each organ or situation, and repeatedly urges on the practising physician the dangers of delay and the advantages to the patient of an early positive diagnosis. It is the well-established opinion of the best medical authorities that at the present day early and thorough operative removal of the primary tumor offers the most certain cure for cancer. Other methods of treatment are of value in incurable cases, but to obtain a sure and complete cure of the disease the original focus must be eradicated, together with all of the tissues which are known in each region to be the ones earliest invaded with the beginning of extension of the disease. Thirty years ago the early signs of appendicitis were little known,—and the mortality was enormous in comparison to that of the present day when the public and the physician both recognize the importance of early operation. It is surely not too much to hope that a similar reduction in the mortality of many of the more favorable forms of cancer will take place when the imperative need of early operation for this disease is better understood. It is not to be wondered at that the older members of the community,—who are the ones concerned in the cancer problem,—who have seen one and another of their friends and acquaintances die from cancer, and many of them from recurrence after an operation, have little faith in the surgical treatment of the disease. They do not know that in the last twenty-five years the operations for cancer of the different organs have been standardized, the patients have been operated on earlier, and the number of cures has been materially increased. They do not know of the cured patients for the cured patients do not tell, and the scars are rarely visible. These facts about this disease must be established with the laity. They are given in this book and may be used with confidence.

"Precancerous" conditions are described, from which the possibility, or probability of cancer development is likely. The different forms of cancer (carcinoma and sarcoma) are described in their different selective locations; their symptoms are given, and the most successful treatment known to date. Other malignant tumors such as myeloma, endothelioma, glioma, hypernephroma, chorioma, etc., are explained in the same manner. The book contains valuable hints also as to the treatment of operable and inoperable cancer by Roentgen ray and radium. It emphasizes the equal importance of the nurse with that of the physician, in contributing to the comfort of advanced cases of recurrent cancer.

Attention is here called to this handbook to note the fact that, in Nebraska nothing has as yet been done to organize a propaganda for the education of the public in the subject of cancer. In many of the other states public lectures on cancer,—its early Recognition and Treatment, are being given by physicians selected for that purpose; these lectures are given before Women's clubs, Rotary clubs, and other public gatherings. They emphasize the fact that returns of cancer mortality in the United States indicate that ninety thousand people die per year from cancer, in this country. W. J. Mayo says, "One woman in eleven and one man in thirteen die of cancer," and this proportion of cancer deaths will be maintained in the enormously greater number of persons who reach the cancer age.

We have organizations in Nebraska and throughout the country, for the control of tuberculosis; the public knows that tuberculosis is a contagious disease, and every individual is willing and anxious to co-operate with the Public Health Service in every precaution against the spread of the disease, by confining patients in sanitariums or sending them to favorable climates. The result of this is that a diagnosis of tuberculosis is no longer regarded as the equivalent of a "death sentence." This is not the general opinion regarding cancer, because the public is ignorant about it. The public does not know that if taken early, cancer is a curable disease; that it is not contagious. Statistics show that in each of the States there are annually at least half as many deaths from cancer as from tuberculosis, and in some States a greater proportion. "If all deaths from cancer were correctly ascertained and certified, it is probable that the total for the United States would approach or exceed 100,000 per annum." In 1917 there were 110,285 deaths from tuberculosis.

Is it not time there was a general awakening in this important direction, and that Nebraska physicians should do their part in this endeavor!

—J. E. S.

The 1921 Convention Program

Our Constitution and By-Laws for the Nebraska State Medical Association, Chapter 8, Section 2, reads as follows:

"The Committee on Scientific Work shall consist of the Secretary, who shall be Chairman, and the Chairman and Secretary of the Sections, who shall determine the character and scope of the scientific proceedings of the Association of each session subject to the instructions of the House of Delegates or of the Association, or to the provisions of the Constitution and By-Laws. Fifteen days previous to each annual session it shall prepare and issue a program.

The time for the meeting of the 1921 Convention has been lengthened so that there will be three full days of program instead of two days, as in former years. The program committee will do its best to arrange the material sent in so that it will provide a meeting that will be of interest to all who attend.

The titles to all papers should be typewritten or legibly written in long hand and mailed before March 1, 1921, to the Nebraska State Medical Association Program Committee, 519 McCague Building, Omaha, Nebraska.

STATE NOTES

Nebraska on the Map

On September 19, 1920 the State Bureau of Health was officially notified of the admission of Nebraska to the registration area for deaths as designated by the United States Census Bureau. Following this action on the part of the Census Bureau they were invited to make an examination of the work being done in birth registration. On October 20 their representatives reported in Lincoln and started this examination which was very thorough and covered the work done in birth registration for the entire State. On December 4th, 1920 the State Bureau was officially notified of the admission of the State into the registration area for births.

Nebraska was the thirty-fifth State admitted to the registration area for deaths and the twenty-fourth State admitted to the registration area for births. This is an achievement of which every person in the State may justly feel proud. It has been made possible only by the hearty support and co-operation of all persons in the State who were anxious to see Nebraska take her place with other progressive states.

I. H. Dillon, M. D.,
Chief, Bureau of Health.

Annual Meeting of Council.

The annual meeting of the Board of Councilors will be held at the University Club, Omaha, on January 10th, at 6:00 p. m. At this time reports for 1920 will be heard and the affairs of the Association for the coming year will be outlined.

SOCIETY NOTES

The annual meeting of the Cuming County Medical Society was held in Wisner Nov. 30th. Every town in the county was represented. Dr. T. D. Thompson, West Point, was elected president; Dr. W. L. Crosby, Beemer, vice president, and Dr. F. J. Kotlar, West Point, secretary-treasurer.

The Madison County Medical Society held its regular meeting at Norfolk, Dec. 9th. Dr. E. L. Brush, Norfolk, was elected president; Dr. W. R. Peters, Stanton, vice president, and Dr. A. E. Gadbois, Norfolk, secretary-treasurer.

The Richardson County Medical Society met in Falls City Dec. 1st. Dr. W. N. Anderson, Omaha, showed moving pictures on the diagnosis of chest diseases and Dr. Newell Jones, Omaha, spoke on tuberculosis of children. Dr. C. P. Fordyce was elected president; Dr. H. D. Burchard, vice president; and Dr. C. L. Hustead, secretary-treasurer.

At the annual meeting of the Omaha-Douglas County Medical Society held on December 14th, the following officers were elected: Dr. A. D. Dunn, president; Dr. Palmer Findley, vice president and Dr. R. A. Dodge reelected secretary-treasurer.

The regular monthly meeting of the Johnson County Medical Society was held in Tecumseh on November 15th with five members present. A discussion of the general practice of medicine was engaged in.

The Omaha Roentgen Ray Society held their annual meeting on December 6th. Election of officers resulted in the following: Norman C. Prince, president; T. T. Harris, vice president and W. L. Ross, secretary-treasurer.

At the annual meeting of the Pierce County Medical Society, Dr. H. Malerian was chosen president, and Dr. F. H. Nye, secretary-treasurer. Following the meeting the members were entertained at a dinner given in their honor by Dr. and Mrs. G. B. Desparois.

ABOUT THE DOCTOR

Dr. C. G. Moore of Schuyler has moved to Fremont.

Blue Hill is to have a hospital, the creation of Dr. McGill.

Dr. M. T. Sigler, late of Corning, Kansas, has located at Odell.

Dr. D. G. Walker, Lindsay, is a patient at a Lincoln sanitarium.

Dr. F. J. Rosenberg of Lexington is spending the winter in California.

Dr. E. L. Brush of Norfolk attended the convention of the Northwestern Surgeons Association held in Chicago recently.

Dr. R. B. Adams of Lincoln has been appointed secretary-treasurer to fill the vacancy caused by the death of Dr. Aikin.

Dr. M. H. Carrington until recently a practitioner at Valley, but now located in Omaha, underwent a serious operation lately.

Dr. H. L. Starkey, Wood River, had a sensational auto accident recently when his Ford turned over pinning him underneath.

A number of Omaha's leading surgeons attended the meeting of the Western Surgical Association at Los Angeles early in December.

Dr. Joseph Denton, formerly assistant bacteriologist of St. Louis University has become resident pathologist of St. Joseph's Hospital.

Rear Admiral W. C. Braisted, surgeon-general of the navy since 1914 has been retired and is succeeded by Rear Admiral, Edward R. Stitt.

$100,000 is to be raised the first of the year at McCook, to build a hospital, which when completed is to be conducted by the Dominican Sisters.

Dr. Edward S. Furay, Omaha, has located at Fordyce and has become associated with Dr. J. M. Johnson in the conduct of St. John's hospital.

In a New York case, Antowill against Friedman, involving severe X-ray burns, the supreme court awarded damages to plaintiff amounting to $24,486.

Dr. Charles L. Mullins, Broken Bow, an ex-president of the State Medical Association, submitted to a serious operation in December in one of the Omaha hospitals.

Dr. Dwight Sigworth, Stanton, after making arrangements to locate at Kearney, accepted a position with the Dr. Campbell hospital group at Norfolk, effective January first.

Dr. G. L. Labot, of the University of Paris, in residence at the Mayo Clinic, spoke on Local and Regional Anaesthesia at the University of Nebraska College of Medicine Dec. 13.

Dr. Emma Lawrence, for several years a physician at the Institution for the Feeble Minded at Beatrice, and later a practitioner at Omaha, has located in her home town, Falls City.

Dr. J. C. McKirahan, some years ago a practitioner at North Platte, and more recently in army medical service overseas, has returned to North Platte and will devote himself to surgery.

Dr. Harold Gifford, Omaha, accompanied by Dr. Casey Wood, has gone to British Guiana to do some research work on eyes in the tropical research laboratory of the New York Zoological Society.

Erection of a fireproof addition to St. Mary's Hospital, Columbus, will begin early in the spring. The addition is to cost upward of $200,000 and will bring the capacity of the hospital to 200 beds.

Charles Young, the Madison county leper, who escaped during July from the shack which was his domicile at the County Farm near Battle Creek, was apprehended Nov. 26, at Washington, D. C.

The Falls City Community Hospital has been sold under bankruptcy proceedings to the Lincoln Trust Co., for $30,000. A new hospital association is being formed and the hospital is to be rehabilitated at once.

Dr. F. A. Van Buren, Omaha, has accepted an appointment to the Army Medical Corps with the rank of Major. Dr. Van Buren was a medical officer during the war and was in service in France nearly two years.

Dr. J. F. Edwards, Health Commissioner of Omaha, has recently attended meetings of the United States Public Health Service, the American Social Hygiene Association, and the American Red Cross, in Washington.

A Neligh lady, the late Flora J. Anderson, has bequeathed $500 each to the State Orthopedic Hospital, the Clarkson Hospital, Omaha and Campbell Hospital. Norfolk for the welfare and amusement of children of the institutions.

Dr. R. B. Adams, the newly appointed secretary-treasurer of the State Medical Association was tendered a banquet Dec. 9, by the Lancaster County Medical Society. A number of medical men prominent in the state association from various parts of the state were present.

The new Lutheran Hospital, Beatrice, was dedicated Nov. 21. The hospital represents an outlay of $225,000, has 100 beds, and is thoroughly modern in every department. Dr. H. M. Hepperlen had much to do with the building of the new hospital and remains chief surgeon.

MARRIED

Dr. Floyd J. Murray of Omaha and Miss Helen Biles of Pender were married at the home of the bride's mother on November 17th.

DEATHS

Dr. Mary A. Quincy, Ashland, died Dec. 7th, aged 63 years. Dr. Quincy was a native of Wisconsin, came to Nebraska when 20 years of age, graduated from the Nebraska University Medical School and had been in practice in Ashland for about twenty-four years. She was always active in medical society work (was secretary of the Saunders County Medical Society at the time of her death) and was one of the well known women physicians of the state.

Dr. Ferdinand Brother, Beatrice, died Dec. 7th, aged 87 years. He was a graduate of the Missouri Medical and Jefferson Medical Colleges. He was a veteran of the civil war and the oldest Mason in the state. He had resided in Beatrice since 1890.

Dr. Isadore Dyer, New Orleans, editor of the New Orleans Medical and Surgical Journal and one of the leading dermatologists of the south, died in October at his home aged 55 years.

BOOK REVIEW

Blood and Urine Chemistry. By R. B. H. Gradwohl, M. D., and A. J. Blaivas. Cloth. Second Edition. Price $5.00. Pp. 418 with 75 illustrations and 4 color plates. St. Louis: C. V. Mosby Co., 1920.

Truly speaking the book is not for the general practitioner. It is a book for the laboratory worker.

The modern micro-chemical methods of blood analysis are described in detail in the first half of the book. Of exceptional value are the chapters dealing with the interpretation of blood findings. We should like them better, however, were they a little more condensed. This might, in part, be accomplished by avoiding the frequent repetitions and the numerous quotations.

A new section has been included in the present edition, i. e. that of Basal Metabolism. This chapter should prove of interest to students of endocrinology, but the subject is considered in such an elementary way as to leave very little to the imagination of the reader.

On the whole, the material in this volume is presented in a readable manner; though no original contributions are made, the manual is a summary of facts bearing on blood chemistry that have appeared within the last three years in medical literature, particularly the Journal of Biological Chemistry, Archives of Internal Medicine and The Journal of Laboratory and Clinical Medicine.

—M. G. W.

BOOKS RECEIVED

Psychopathology. By Edward J. Kempf, M. D. Cloth. Price $9.50. Pp. 762 with 87 illustrations. St. Louis: C. V. Mosby Co. 1920.

Radiography of the Chest, Vol. 1, Pulmonary Tuberculosis. By Walker Overend, M. A., M. D. (Oxon), B. Sc. (Lond.) Cloth. Price $5.00. Pp. 119 with illustrations. St. Louis: C. V. Mosby Co. 1920.

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CONTENTS

Page
The Early Symptoms and Treatment of Neural Syphilis, J. L. Greene, M. D., Hot Springs, Ark. 33
Diverticula of the Duodenum, A. F. Tyler, B. Sc., M. D., F. A. C. P., Omaha 41
The Treatment of Chronic Arthritis With Special Reference to End Results, Walter L. Bierring, M. D., Des Moines, Ia. 46
The Diagnosis and Treatment of Weak and Flat Feet, W. Eugene Wolcott, M. D., Omaha 49
Editorial 56
Meeting of the Board of Councilors, January 10, 1921 59
American College of Surgeons Meeting 62
General Notes 62
Society Notes 62
About the Doctor 63
Married 64
Deaths 64
Abstract Taken From "American Medicine" — The Fact of the Case, E. S. Goodhue, M. D., LL. D., Pukoo, Molokai, Hawaii 64

The Early Symptoms and Treatment of Neural Syphilis.*

J. L. Greene, M. D., Hot Springs, Ark.

Yesterday coming up from Kansas City on my way here from my home in the Southland where I live in a narrow valley surrounded by low mountains, or high hills, that obstruct if they do not obscure my view, I feasted my eyes on unnumbered acres of surpassing fertility spread in an undulated plain, where vision was limited only by the horizon, and I felt inclined to look up an arthritic, rheumatic, cardio vascular renal or syphilitic case and present him with the return portion of my ticket; then telegraph my family to call the dog and come on that I might live and be in the only place that seems like home to me.

As I came along I fell in a reflective and retrospective mood and out of the retrospection, I recalled another glorious May day almost exactly thirty years ago, when I came over the same route, by the same train schedule accompanied by the bride of my youth, coming to Nebraska for the first time, intending as we then believed to establish a home that would continue throughout our lives. Then I reflected on the things that came to me during my residence of a little more than sixteen years, and I said: "I am indebted to Nebraska and its people in a sense I can never repay." I am particularly indebted to the medical profession for all of your goodness to me during these years when friendship, and the favors of friendship, were in as constant attendance as my shadow. And so after an absence of fourteen years, I am more gratified than I can tell to be able to come here and look into your faces and thank you for all of your goodness to me; to thank you for the confidence you expressed in me when you repeatedly elected me treasurer of your society and for the honor you did me when you elected me your president, and to express anew my regret, for the circumstances of my life which made it necessary for me to go away to live in another place without having had the opportunity to actively exercise the office of president of the society. The pleasure that has been mine since my arrival here in the late afternoon of yesterday in meeting all of the older members of the Society and the young men, many of whom were students during my teaching days here, is one that will last through a lifetime and I again thank you for all of the favors of all of the years covered in my residence here.

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*An address delivered without manuscript and taken in shorthand notes, at the banquet of the Nebraska State Medical Association, May 25, 1920.

In discussing the scientific subject that has been assigned, I wish to widen the title that it might read as follows: "The Early Symptoms and Treatment of Neuro Vascular Syphilis."

And in discussing this subject, I wish to separate and classify it into those conditions that arise from acute inflammatory changes, and those that have their origin in subacute inflammation, followed in its course by degeneration of nerve tissue. To clearly present the matter, it is necessary to separate the subject into that class of inflammatory change that first invades the upper levels of the central nervous system, and I wish to have it understood that I do not now speak of upper neuron disease, or later of lower neuron disease, but rather to present the symptomtology of that type of inflammation that first invades the brain, its blood vessels and its membranes, and consequently to these changes as applied to the cord, its blood vessels and its membranes, reference to the invasion of the peripheral nerves, would widen the scope and require more time than can possibly be given on this occasion.

The acute involvements of the upper levels in the order of their occurrence are generally as follows:

First, meningitis, the symptoms of which are fever, head pain, photophobia, rigidity of the neck and Kernig's sign; second, cortical encephalitis, the symptoms of which in the order of their occurrence are somnolence, mental irritability, clouding of consciousness and active delirium followed in most instances by a condition that closely approaches coma; third, endarteritis. This condition may be of a degree that establishes obliteration or results in thrombus formation with resultant paralysis; its earliest symptom is parasthesias involving that part of the body which has its nerve supply in the portion of the brain affected by the pathologic process. Acute involvements of the lower levels of the central nervous system, are meningitis, the chief symptoms being fever, pain and rigidity of the entire spine, or a myelitis or a combined meningomyelitis, if a true myelitis occurs there develops immediately abnormal sensations in the distribution of all of the nerves to that level of the body below the pathologic process. Generally these cases develop a partial or complete paraplegia, spastic in type.

The subacute and degenerative changes in the upper levels are generally a meningocortical encephalitis that has its origin at the time of the invasion of the upper levels by the specific organism of syphilis, and partakes in a general way of the symptoms present in all other types of meningitis; except the epidemic cerebrospinal infection which comes on with such surprising suddenness and which may be readily differentiated by examining the spinal fluid and the demonstration of the presence of the diplococcus intracellularis; these symptoms are headache, vomiting, rigidity of the upper levels of the spine combined with a fever of a low grade.

During the development and presence of the meningitis or meningocortical encephalitis there are other symptons which attend this type, the chief of which are disturbance of the musculature of the eyes, including both the extrinsic muscles and those of the pupil. The latter are generally unequal in size, irregularly circular in outline, and dilated or contracted with abolition of the light reflex. The most important pathologic condition that develops in the upper levels so far as it may concern the comfort and well being of the patient, and which if taken early is amenable to treatment, is endarteritis generally affecting the middle cerebral artery and its branches. The greatest care should be exercised in differentiating a meningitis or a meningocortical encephalitis from an endarteritis for the reason that if treatment is not promptly and vigorously applied a damage that is beyond repair may quickly develop, so the symptoms of the approach of this condition in a young or middle aged patient known to be or suspected to be suffering from syphilis invites the most careful consideration. The outstanding feature is, of course, disturbance of the sensation in the nerve distribution to the opposite side from the lesion, to be quickly followed by loss of power. These symptoms may be present for some days before obliteration has taken place or thrombus has been formed. It is in this period before the closure of the artery, and then only, that this patient may be saved from the direful consequences about to overtake him and from the necessity of going on through a lifetime with a hemiplegia with its resultant spasticity and the establishment of a permanent state of helplessness so far as one side of the body is concerned.

Here I wish to digress for a moment from the further consideration of the symptoms that the treatment of this, perhaps one of the most important of the syphilitic lesions may be more deeply impressed. If, when the earlier symptoms are present, this patient may be mercurialized in the quickest possible manner and at the same time be placed under the influence of an iodid, it is not unlikely that he may be rescued. To that end the most rapid method known must be employed and I recommend the immediate intravenous administration of mercury, for this purpose either the cyanide or the benzoate may be used, and in addition to this, inunctions over wide areas of the body of a 50% mercurial ointment should be applied each day. The iodid of soda in rapidly increasing doses to a point when the patient is taking several hundred grains, from three hundred to six hundred, daily is to be given.

The acute conditions which invade the spinal cord are, if possible, of more serious consequence to the patient than those which invade the membranes, arteries and substance of the brain; that is to say, they may bring the patient to a condition where life is less tolerable and less useful than any damage that results from the involvement of the upper levels. I refer to a spastic paraplegia with resultant loss of control of bladder and bowel function together with more or less complete loss of power in all levels below the point of invasion, during the acute period of which the patient is likely to develop extensive trophic disturbance with sloughing bed sores.

The earliest symptom of cord involvement is disturbance of the deep reflexes with various parasthesias quickly resulting in the loss of power and disturbance of bladder function. In the beginning there is generally a spastic bladder with retention and distention oftentimes to an alarming degree before it is observed that the bladder is over full, and what appears to be an incontinence of urine is in fact an incontinence of retention from a distended and overflowing bladder.

Of course, the cord and its membranes may be involved in other inflammatory processes than those due to syphilis and the symptomatology would in the main be similar. Not infrequently there is a hematogenous infection from suppurative disease in any part of the body and it occasionally follows the eruptive fevers; I have seen more cases as a result of measles than any other type of the eruptive diseases. So much for the acute syphilitic invasions of the central nervous system and its blood vessels.

The subacute type of inflammatory change which invariably results in degeneration has been described for many years under the heads of paresis when it invaded the upper levels and locomotor ataxia when it invaded the lower levels. I would like to suggest a betterment of the nomenclature of the pathologic conditions. The word paresis is not sufficiently expressive as applied to that type of a low grade of inflammation followed by degeneration where the brain is involved; indeed it is rather meaningless. The designation of locomotor ataxia when the cord is involved refers only to a symptom of the condition and does not in any way indicate its pathology; the word tabes would be better if applied to the entire pathology present, and where the brain is involved should be designated as cerebral tabes; where the cord alone is involved as spinal tabes; if both are involved together as not infrequently occurs, it could be designated as cerebrospinal tabes, or as it is sometimes called tabo-paresis. Here I recall the earlier discussions of the causative factor of these two now well recognized conditions and that it was practically all without syphilis as a causative factor. Once in a discussion aboard train between here and Chicago at which Dr. Jonas was present and I was urging my views of syphilis as a causative factor of paresis, he stated that if I did not quit talking about paresis that I would be getting it myself some day. That was before the discovery of the spirochete, and when text books were saying that perhaps 40% of the patients suffering from these conditions had at some time been syphilitic, and that I was saying that every one whose history I had been able to follow out showed a previous syphilitic infection. Once a paper was read before this society under the title of "Locomotor Ataxia" and syphilis as a causative factor was given scant consideration. In the discussion that followed I urged my view that syphilis was the sole and only cause. Another member of the society said in his discussion and as a rejoinder to mine, that syphilis was a handy peg upon which some people hung "I don't know." I feel a bit of just pride in coming at this time to say that the whole problem has been definitely settled and is now outside the pale of speculation. Every paretic is a syphilitic and so is every tabetic and syphilis is the sole and only cause.

In cerebral tabes (paresis) a train of symptoms is brought about that are both mental and physical. Inasmuch as the physical often precede the mental, and the mental may precede the physical, it would be better to have a knowledge of both. Particularly I believe that every young man or woman known to be going through the process of a syphilitic infection, who develops the so-called neurasthenic state, should at once have an investigation that would determine beyond doubt if there is invasion of the central nervous system, and if what is really a destructive process is being passed under a harmless name. In the mental symptomatology a neurasthenic state is probably the very earliest mental symptom. Its outstanding features are, of course, a general irritability in the mental life to be quickly followed either by profound depression or an exaltation, the last commonly spoken of as the grandiose delusion trend of paresis; I wish at this time to place on record an observation that as far as I know has not been made by others, at least it has not come to my attention in print: that when a grandiose delusional trend develops in a paretic that delusional trend is practically invariably predicated on the chief aspiration or hopes of the individual's life, and inasmuch as in our American life for the last century or more there has been a consuming desire to obtain wealth, many of these patients express delusions concerning the sudden or possible immediate acquisition of immense riches. Special instances to justify the theory that this trend is based on the patient's aspirations have come to me many times; two instances will be sufficient. I recall a minister who had been engaged in evangelistic work who from the beginning gave expression to a delusional trend which contemplated the immediate evangelization of the whole world and the establishment of the Christian religion as the religion of all mankind. Another, a brewer who lived in this city, told me with great earnestness that he was intending to build a building that would reach from the Bee Building to Plattsmouth, that it was to be built of marble and bronze and its entire roof space given over to one magnificent expanse of beer garden, that it was to be so high that the revelers might play ball with the stars. Following the excitement and the delusional trend expansive in character these patients invariably show a general lowering of the mental level; there is a gradual falling away from the ethics of the life they have lived and a change in their ethical point of view. The previously pious man may immediately become addicted to vices while he who had been immoral suddenly develops religious tendencies that completely fill his field of consciousness. Since we are not dealing at this time with the more advanced symptoms of the condition under discussion, the dementing process with all of its rapid changes is not considered.

The physical symptoms which often precede any mental change other than slight irritability, for months and some times for years are of perhaps greater importance than alteration in the patient's mental condition. It is my belief that the first symptom of organic change, or at least the one that I most frequently observe, is to be demonstrated by a study of the pupils. Long before there is inequality, wide dilatation or contraction of the pupils a critical study of their outline with a proper light will show that they are irregularly circular. These irregularities are fantastic and may represent almost every possible geometric departure from a true circle. With the development of this symptom of failure of only a few muscle fibres in the iris, there develops a general condition of slowness in the light reflex. It is not necessary to discover a wide dilatation of one and contraction of the other, or the contraction of both pupils to lead one to suspect that he has the first symptom of brain syphilis. Next to the pupil changes the nerve mechanism most frequently involved is the third cranial nerve with a resultant ptosis. Of course, any one of the cranial nerves may be involved in a syphilitic process and the symptoms developed would depend upon which was involved and the distribution of the nerve or whether the nerve was entirely without function. In a spinal tabes the pupils are practically invariably contracted with complete abolition of the light reflex, and retention of the reaction to accommodation and convergence. So long as the pathologic condition is not that of destruction there will, of course, be some reaction to both light and distance and in studying the light reflex of the eye the observance of failure to contract in the entire diameter with equal speed, establishing for an instant a condition where the pupil is irregularly circular, is of great diagnostic value. In many neurasthenics, using the term to describe those really nervously exhausted, the pupil symptom when the light reflex test is suddenly applied results in a snappy contraction to be almost instantly lost so that the pupil will dilate while under the concentrated direct light. This shows only irritability and exhaustion and not destructive change.

Next in the order of frequency of symptoms is perhaps the tremors that develop in the tongue and in the smaller muscles of the face. These precede for many weeks real slurring of speech and faulty articulation, the last mentioned symptoms being later and not early symptoms of cerebral tabes.

When the pathologic process is developing in the cord and we are establishing or having the earliest possible discernible symptoms of an oncoming spinal tabes, I believe those of greatest importance are the parasthesias, and if I were to select one of the very earliest symptoms that I have ever observed it would be the patient's statement that he has a cold spot on his leg, or that he has a spot that is too warm or that he has a sensation as if something were too tight about one of his toes, generally the great toe. Statements of this character entitle such a patient to an investigation that will solve and settle the question for all time.

After these early parasthesias that may go on for weeks or months the next in order of frequency is the sharply localized, stinging pain present for only an instant to disappear for hours or days; later the referred pains become more general in character and it is an easy matter to recognize if the patient is developing organic change in the posterior columns of his cord. Other symptoms such as disturbance of station and gait are beyond those of early symptoms and are not considered.

The deciding factor and the one of the most vital importance to the patient in whom it is suspected there is beginning syphilitic invasion of his central nervous system is, of course, to be had in the laboratory. The test of the blood is not sufficient; indeed it is of frequent occurrence in my office to find a blood stream entirely negative to the original Wassermann test, using the anti-sheep method with an alcoholic, an acetone insoluble and a cholesterinized antigen. Such a report from our laboratory with the train of symptoms similar to those above described is not sufficient to exclude syphilis of the central nervous system, and we invariably investigate the spinal fluid; it is this procedure that brings the final word. The standard that I believe to be the correct one for determining if a patient has syphilis that has invaded the central nervous system is first, the Wassermann reaction using all the antigens above mentioned and the fluid in increasing amounts up to one cubic centimeter, when if the test is positive and there is an increase in the albumin and globulin present with an increase in the cells, a diagnosis may be considered certain. The cell count is of uncertain value when it closely approaches normal and so far as I know the exact number of cells to be found in spinal fluid in normal conditions is not definitely known. In my laboratory we consider nine cells to be the top of normal; any number beyond that is taken into account as one of the determining factors, that is, the cell count, the globulin and albumin estimation with the Wassermann reaction.

Now concerning the treatment: How to treat syphilis has been in every textbook for all ages. It has consisted of instruction to rub on some mercury and take some iodide of potash—and trust in God, I suppose. The latter would do more good than the former. To treat a syphilis of the central nervous system that has in it the potentialities of destruction of the intellect, and then destruction of the life; and to treat a tabes that has in it the possibility of absolutely destroying ability to co-ordinated motion, not only of the legs, but of all the muscles, contemplates a clear understanding that every syphilitic is a possible paretic or tabetic unless this be true—and I am inclined to believe that what I now speak is true: that there are families of the syphilitic germ that have a tendency to affect bones, others to affect skin, and others to affect the internal organs, and still another with a penchant for selecting the nervous system.

So in the beginning with the primary lesion and the beginning of treatment, it must be understood that during the secondaries—during the skin and mucous membrane manifestation of this ailment—a meningitis frequently develops. I think every patient should have the spinal fluid investigated several times during the activity of the secondaries. If it goes by and he is treated until the blood stream is negative, the physician must investigate his spinal fluid at the time when he has first found the blood negative. In six months, if the blood still continues negative, he should investigate it again, so there may be an opportunity to reach the infection before it has caused destructive lesions to the central nervous system.

The greatest opportunity for rendering service a physician can have except when he is called to see one suffering from diphtheria in the early hours of the infection, or a parturient woman in eclampsia, or a patient suffering from an injury with rapid loss of blood which, if not arrested, will destroy life, is when he has presented to him a young person who is suffering from endarteritis, the symptoms of which are so easily recognized. For, if his action is not immediate and thorough, this patient is to be doomed to a lifetime of paralysis with all of its attendant discomfort. When I have been fortunate enough to see that type of patient during the last few years, I have said to my assistants that this patient is to be mercurialized within an inch of his life; that he must be given iodid in rapidly increasing doses. This means that he will be given a soluble salt of mercury intravenously and that it is done at once. We would use either the bichloride, the cyanide or the oxycyanate. The salt is dissolved in sterile water; when the needle of the syringe is in the vein the plunger of the syringe is withdrawn until approximately five cubic centimeters of blood have been drawn into the syringe; this is then slowly reinjected in the vein without disturbing the position of the needle. The withdrawal of the blood, if the solution is at body temperature, and its administration with the mercury salt renders it less irritating to the vein. The iodid is to be given by the mouth and the amount measured only by the patient's tolerance; occasionally when haste is imperative fifty to two hundred grains may be given intravenously. Oftentime patients who tolerate an iodid poorly will have a better tolerance if it is given intravenously and in a large dose in the beginning.

In an involvement of the spinal cord where a paraplegia is imminent I prefer a rapid and I might say overwhelming treatment. It is, of course, possible to mercurialize a patient by inunctions but it is too slow and the damage will have been done before that desirable condition can have been obtained.

Another point of more importance is when there are symptoms that might be due to either an endarteritis with obliteration and threatened obstruction, a thrombus or an embolus and the best service demands that blood be kept going through a gradually closing artery. To that end full doses of strychnia with other quick stimulants may be given. If the pathologic condition is a thrombus or an embolism this treatment would have a beneficial effect in that it would force the obstruction deeper into the artery and possibly advance it beyond a branch of the artery and thus save an area of the brain that would otherwise be left without blood supply.

In a general way the treatment for the milder and less sudden invasions of the nervous system are carried out at my office substantially as follows. If in Hot Springs the patient has baths, and let me here state why I believe that patients do better under treatment there than they do if undertaking treatment in their homes. First it is because they are away from home and have no other occupation or business to add to their worry and may give their entire time to their treatment, to rest and recreation. Second, that I believe that while bathing in the radio-active water of the hot springs a patient's tolerance for both mercury and arsenic is much increased. The amount of mercury given daily to such patients covering a period of from three to six weeks could not possibly be tolerated if it were taken under the ordinary conditions of living at home with attention to business. All patients have inunctions of a mercurial ointment and the amount is measured by their tolerance. The inunction of mercury is a fine art. To tell a patient to rub some on one side one day and some on the other side the next day followed by some rubbed on the inner aspect of the thigh on the following day could never in any event result in his being mercurialized. He must use it every day in sufficient amount and at a time when the skin has been made active with a suitable bath that will just produce perspiration, never to excess. Then by the hand of an attendant or professional mercury rubber have applied one fourth ounce over a wide area, the back being selected in most cases, and with a rubber glove considerable force is used for a period of fifteen to twenty minutes. They are then required to wear a thin gauze undergarment continuously day and night, using the same garment for a period of at least three weeks so that there is no time when they are not having mercury applied in an absorbable form. In addition to this we see them at the office each day that the effect of the inunctions may be observed and that it may be aided by either an intravenous or intramuscular injection; for the first we use cyanide, for the second the oxycyanate.

I am well aware of the fact that the succinimid of mercury is the best possible soluble salt, but it is painful and patients will not submit to this severe pain day after day for weeks. I have tried to have many of the standard manufacturers of drugs, both in America and Europe try to put up this salt of mercury with a harmless local anesthetic, but they have been unable to accomplish this result. While engaged in hospital practice this was the only drug I used for intramuscular injections, but it is quite one thing to have a patient in a hospital where he is detained and must obey orders, and yet another to induce one to come to your office every day where he knows he will be willfully hurt and made to have pain for hours. What with one fourth ounce of a 50% ointment each day with one cubic centimeter of a 1% solution of the oxycyanate by deep intramuscular injection with an iodid in increasing doses to the point of tolerance and with the intravenous injection of neoarsphenamine at intervals of from three to seven days, we feel that we establish a plan of treatment that is overwhelming.

I wish to state here that it is my belief that in the treatment of syphilis from the origin of the initial lesion to the end of treatment, of either neural or visceral syphilis, rapid courses of treatment of extreme severity with complete rest and rebuilding of the patient between is much more effective than a long drawn out plan of treatment where the anciently used mixed treatment was given by mouth over a period of two or three years; for the reason that I believe that the small doses of mercury and arsenic continuously applied has a tendency to develop the organisms a special type of resistance.

In addition to this type of treatment we make choice between either spinal drainage following the intravenous administration of neoarsphenamine, or the intraspinal injection of the patient's blood serum. The frequency of the drainage depends upon the patient's tolerance; many patients may have the fluid withdrawn each week without much discomfort; others will suffer severely from headache though the drainage is done while they are recumbent in bed where they are required to remain for thirty six to forty eight hours. The intraspinal serum is prepared as follows: fifteen minutes after the intravenous administration of the neoarsphenamine, and we always select this rather than arsphenamine for the treatment of neural syphilis, and in a dose that has been determined by testing the patient's tolerance with a small dose, we take about fifty cubic centimeters of blood; this is put by to chill and separate the serum from the clot. The serum is then inactivated for one hour and given intraspinally. To this we not infreqently add 1-75 or 1-50 grain of mercury benzoate. This generally produces a severe reaction; there is oftentimes much pain with a rise of temperature. What appears to be a little thing in this procedure has recently been developed in my office and has proven most helpful to our patients' comfort; that is, to give the serum warm, that is a little above body temperature; it has been observed that there is less severe reaction, particularly the pain is much less. To those of you who have been giving a serum cold, it is urged that you bring it to a temperature of about 100 degrees and administer it at that temperature; I am sure you will find better results.

This plan of intensive treatment has been built up in my office and is the result of my years of experience. While I know that the patient who subjects himself to it will occasionally have extreme discomfort when his point of tolerance has been overstepped, yet a careful inquiry made daily before the intramuscular or intravenous injection has been given will oftentimes save such patients from the very disagreeable effects of a mercury poisoning; and I assure those of you who have not seen a patient suffering from an overdose of mercury that you cannot well understand the acuteness of the distress incident to the diarrhea. It is always well to keep the kidneys under constant observation. Practically every person who undertakes this type of treatment will if they begin showing a perfectly normal urine, develop during the course of the treatment a very large number of granular casts. I have not known any who did not clear up this condition with the baths that we give at the end of one of these courses of treatment that consist of our so called vapor baths, where the patient has either the cabinet with the head out or an enclosed room where he is surrounded and breathes vapor for from three to ten minutes, immediately thereafter going into a super-heated room where a temperature of 150 to 175 degrees is maintained for an additional ten or fifteen minutes, during which time he drinks large quantities of hot water. This in Hot Springs is called "vaporing out."

Such a course of treatment can ordinarily be covered in from three to six weeks. Patients are then advised to have an investigation made at the end of three months, when if there is still evidence of the infection, they are to return for further treatment.

I have in mind a patient who contracted syphilis from the cut of a razor while being shaved in a public shop. He went over the secondary stage without having the infection recognized; then he was suddenly developing a rather severe endarteritis with partial loss of power when his condition was recognized after a Wassermann test had been made. He had some treatment and was sent to me in Hot Springs where investigation of the blood and fluid showed him to be suffering from both an infection of his general blood stream and that he had a neural syphilis. He subjected himself to the type of treatment above mentioned on three different occasions and had a perfectly satisfactory recovery with only a very slightly impaired musculature on his left side.

I recall another patient, a prominent business man in a southern city, who as a result of his own observation discovered that there was something wrong with his memory. An investigation showed that he had suffered from what was evidently an initial lesion many years before but that he had never had skin or mucous membrane secondaries. Here let me observe that in all of the patients whom I have ever seen suffering from an insidious cerebrospinal tabes, I have never been able to obtain a history of active skin secondaries and I have been led to believe that there are types of the syphilitic organism that select different tissues of the body for their habitat; nor have I ever known a single patient who while being treated in the earlier stages of his disease was mercurialized to the point where he had suffered from mercury poisoning to subsequently develop neural syphilis. To return to the patient above mentioned: after the laboratory work had demonstrated that he was suffering from syphilis that had invaded his nervous system, it was agreed that he would go under the most intensive treatment; that ostensibly he would go to a watering place for his vacation, but that in fact he would take up residence in a hospital where his treatment would be supervised by his physician. It was agreed that he would begin the intensive plan above outlined and that he would take the succinimid regardless of the pain it produced. It was understood that he would have 1-5 grain the first day, 2-5 grains the next, when if he did not have bowel symptoms it might be increased to 3-5 grains; that I would see him from time to time. After three or four days I called at the hospital in the evening and was told by the nurse that the patient was not doing well, that he had very many bowel movements during that day, that there was blood in those of the afternoon. She was just ready to give him a hypodermic of the mercury salt. Being told to wait for an investigation, the record showed that the order had been misunderstood; that she had in fact given him 1-5 grain three times the first day, 2-5 grains three times the second day and 3-5 grains twice on that day. He was profoundly mercurialized, poisoned to within an inch of his life. A quick investigation showed that he had active parenchymatous nephritis with practically complete arrest of kidney function. It was believed that he would die and a frank statement of the error was made to his relatives, yet after many days of effort his nephritis subsided and he made an uneventful recovery from that condition. Repeated examinations of his blood and spinal fluid covering a period of two or three years showed a negative reaction; there was, however, remaining evidence of destruction of cerebral tissue that had taken place before his condition was recognized. I have often thought that if we could take the chance of administering mercury in the heroic way that has been suggested above, we might have a larger percentage of recoveries but we can not take these chances.

Diverticula of the Duodenum.*

A. F. Tyler, B. Sc., M. D., F. A. C. P., Omaha.

Until the last few years, it has been thought that diverticula of the alimentary tract were rather infrequent. Due to the refinement in diagnostic technique, especially the introduction of the X-ray in the routine examination of the gastro-intestinal tract, it has been proven that they are much more frequent than was formerly supposed.

The most common site for diverticula is in the colon, the left half of the colon predominating, but diverticula are found rather frequently in the other portions of the colon and even occasionally in the ileum, and quite often in the duodenum. Those of the esophagus have been diagnosed clinically for many years. The diagnosis of diverticula of the duodenum, however, is of rather recent origin. In fact until 1919, (1), only seventy-three cases had been reported in the literature. At the 1920 meeting of the American Medical Association, Case (2), reported he had discovered thirty-six cases in his routine examination in the past several years.

Etiology.

There are two types of diverticula of the duodenum. First, is the congenital type, which is due to a deformity in the embryonic development of the intestinal tube, which leaves a weak place in the muscular coat so that as the trauma incident to normal digestive function continues through life, there is a gradual pouching outward of the mucosa through the weak place in the muscular wall with subsequent pouching outward of the serosa. The second type is produced by trauma, one such case being reported by Seigrist in 1919.

In this case, a man forty-eight years of age had received a blow over the abdomen when he was twenty-three. Since that time he had complained of indefinite gastric disturbance and an epigastric hernia had occurred after the traumatism. The hernia was relieved by proper surgical procedure, but the repair of the hernia did not produce relief of the gastric disturbance.

Pathology.

The pathology of diverticula of the congenital type would of course, show the presence of the mucous and serous layers of the tube, with the absence of the muscular layer. The pathology of the traumatic type may be slightly different as there may appear not only the mucous and serous coats, but a thin layer of muscle tissue, or as in Seigrist's case, the mucous coat with numerous Lieberkuhn glands and the submucous coat with the muscularis mucosae containing Brunner's glands. In the opinion of Seigrist, the congenital type is much more rare than the acquired type following trauma.

Symptoms.

The presence of a diverticulum in the duodenum does not produce symptoms unless a definite diverticulitis takes place, the condition here being analogous to that in the appendix. As long as no inflammatory condition exists, one has no symptoms, but as soon as inflammation is demonstrated, then symptoms appear. The symptoms are usually similar to those of ulcer of the duodenum, except they do not have as definite relationship to the intake of food, nor do they have relief from the taking of alkalies; giving one the impression of a chronic inflammatory condition in the right upper quadrant of the abdomen. Usually the pain is not referred, as in disease of the gall bladder. Physical examination will reveal a definite localized tender spot during the period when inflammation exists. In one case which came under my observation, this tenderness was so excruciating that very slight pressure over the definite localized spot would cause the patient to scream with pain. In another case, the patient was without symptoms, having been referred to us for examination for another purpose. This fact leads me to think that we happened to see the case when there was practically no inflammation of the diverticular sac. In addition to the localized tender point, there will also be a hypersensitive condition in the skin which is supplied by the corresponding segment of the cord, the pain being referred from the diverticulum

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*Read at Councillor District meeting, Table Rock, Neb., Sept. 29, 1920.

through the sympathetic system to the ganglion along the spine and then arching across to the corresponding segment of the spinal cord and then referred through the sensory nerve filaments to the skin.

Diagnosis.

Diverticula of the duodenum, of course, must be differentiated from ulcer of the duodenum, congenital membranes around the duodenum, inflammatory adhesions around the duodenum, torsion on the ligament of Treitz in the enteroptotic individual, diseases of the gallbladder and diseases of the head of the pancreas. Ulcer of the duodenum will be the most difficult to distinguish from diverticulum because of its location and because of its close similarity in the symptom complex. We think, however, that if one gets a careful history and finds the definite hunger pain coupled up with definite food and alkali relief, that clinically one would be rather certain of the diagnosis of duodenal ulcer. Of course the X-ray examination will tell us which form of pathology we are dealing with.

Congenital membranes and adhesions around the duodenum present a different symptom complex, showing obstructive symptoms rather than those of irritation, such as one finds in ulcer and diverticulum. X-ray examination, if carefully carried out, will enable us to distinguish between this type of pathology and diverticulum. Of course, inflammatory adhesions around the duodenum may be associated with gall bladder disease. In this case, we will have to determine by careful history the location of the tender pressure point, the position of the referred pain, together with demonstration of the gall bladder or of gall stones by the X-ray examination for our differentiation. Frequently one will find periduodenal adhesions as a complication with a perforating ulcer of the duodenum. The history, together with gastric analysis, physical examination and X-ray examination, will help us to determine definite pathology in this type of case.

X-ray findings in diverticula of the duodenum are so definitely typical that I wish to bring this to your attention. One will find a definite sac projecting out from the side of the lumen of the duodenum. This sac will be seen better on fluoroscopic examination, usually in the horizontal position with the patient lying face down or turned slightly on the right side. One can then get the sac in silhouette, projecting out from the side of the duodenum and can definitely locate by visualized palpation the tender pressure point. This pouch will remain full of the opaque substance after the stomach and duodenum are entirely empty.

Treatment.

In simple diverticula of the duodenum, the treatment can be carried out on a more conservative basis than that of ulcer of the duodenum. In fact, the surgeon can usually tie off the sac, putting in a purse string suture and invaginating the stump, leaving the duodenum in practically normal condition. The medical treatment would consist of alkalies, rest, hot packs over the abdomen until the inflammation of the sac had disappeared, when the patient would be free from symptoms until such a time as another period of inflammation returned.

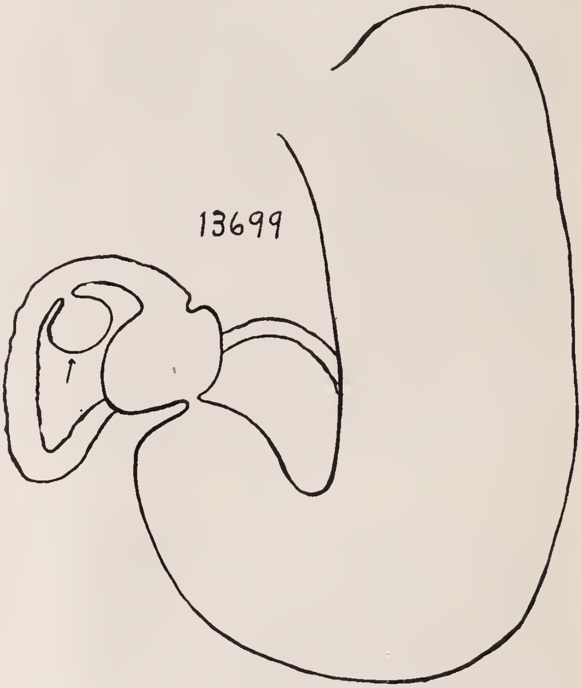

Fig. 1. Case No. 13699—Sketch from X-ray plate showing definite diverticulum of second portion of duodenum. Note the arrow pointing to the sac which is definitely larger in diameter than the opening through the wall of the duodenum. Not operated upon.

I herewith append the following records of cases observed by me, showing diverticula and other pathological conditions which must be differentiated therefrom.

Case No. 13699—Mrs. W. C. S. Age 45.

Diagnosis: Diverticulum of the second portion of the duodenum.

Chief Complaint: Dragging pain in the back.

Clinical History: Patient has had a dragging pain in the lower dorsal region for ten years. She has a feeling that there is a weight fastened around the waist, hanging down in front. This seems to be growing worse.

Physical Findings: The heart, vessels and thorax are negative. There is slight tenderness in the left upper quadrant of the abdomen and marked tenderness over the left kidney on deep percussion.

X-ray Findings: Both kidneys are normal in size. There is no evidence of stone in either kidney, ureter or bladder. The stomach is normal in shape, size, three fingers below the navel when standing, empty in 5 hours. The first portion of the duodenum near the stomach is normal. The second portion shows a diverticulum, which retains the bismuth long after the duodenum is empty. This diverticulum is on the inferior aspect and is about one-half inch in diameter. The opaque enema fills the entire colon, meeting with no resistance and showing no filling defect.

Case No. 13773—Mrs. R. H. A. Age 35.

Diagnosis: Duodenal ulcer with diverticulum of the lower side of the first portion of the duodenum.

Chief Complaint: Stomach trouble.

Clinical History: One year ago the patient began to have stomach trouble manifested by a feeling of fullness and gas which would come on soon after meals. Sometimes there were sour eructations.

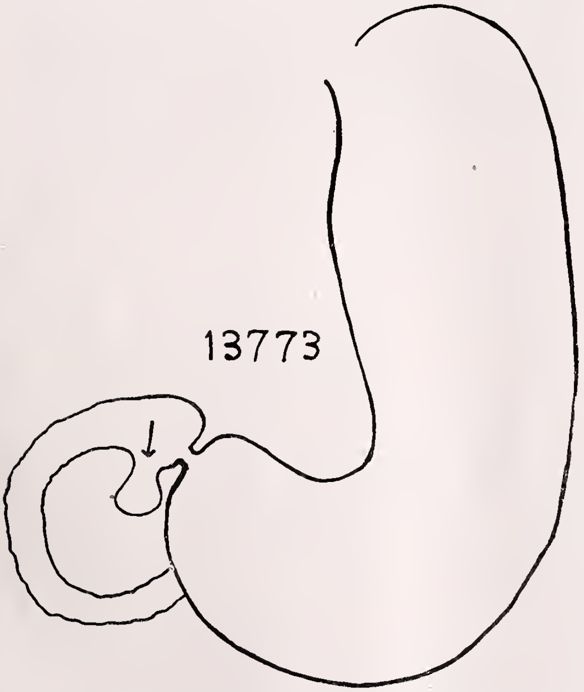

Fig. 2. Case No. 13773—Sketch from X-ray plate showing ulcer of duodenum with pouch proximal thereto. This pouch had the X-ray appearance of a diverticulum but was proven at operation to contain all the structures of the duodenal wall, thus not being a true diverticulum. Proven at operation.

Operative Findings: Ulcer of duodenum with pouching of lower aspect of first portion. Ulcer resected, using the pouch to fill up the defect.

Case No. 13812—Mrs. D. H. K. Age 64.

Diagnosis: Dilatation of the first portion of the duodenum with a pouch on the lower side, probably due to adhesions forming a partial obstruction.

Chief Complaint: Pain below the right costal mar-

There is soreness in the epigastrium, sour foods disagree and she has palpitation and nervous chills.

Physical Findings: Active pyorrhea of all teeth. The thorax and lungs are negative. The heart has a systolic murmur at the apex. There is tenderness in the right upper quadrant of the abdomen.

X-ray Findings: The stomach is normal in shape, size and position, two-thirds full at 5 hours. The duodenum is irregular and tender. There is a definite diverticulum extending from the lower aspect of

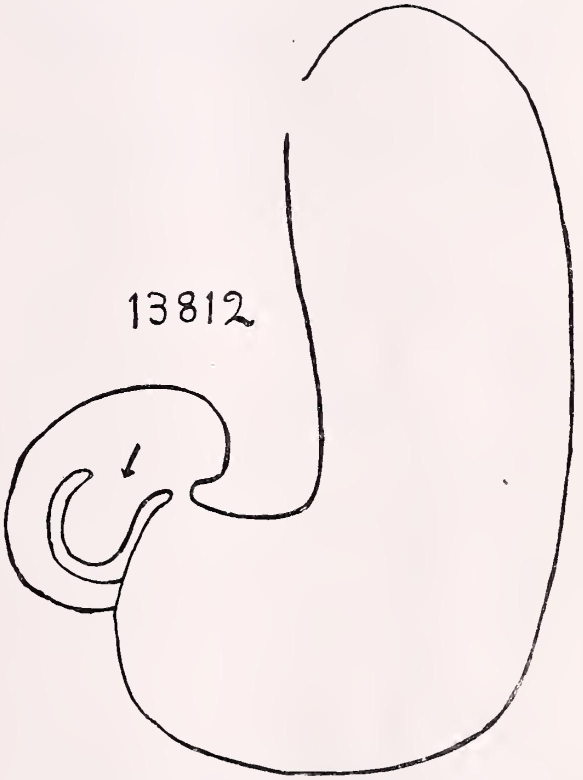

Fig. 3. Case No. 13812.—Sketch from X-ray plate showing pouch of lower side of first portion of duodenum. Probably not a true diverticulum. Not operated upon.

the first portion, which retains the barium after the stomach is empty. Pressure on the diverticulum causes intense pain. The appendix has been previously removed. The cecum and colon are normal in contour and freely movable. The gall bladder is not demonstrable on the plates. Active pyorrhea of all teeth. The lower right second molar is nonvital with abscess at the apex. The left lower third molar is unerupted and impacted.

gin.

Clinical History: For two months the patient has had more or less pain under the right costal arch which radiates to the right and to the back. It has no relation to meals. There has been no severe colic or jaundice nor any nausea or vomiting. She has had a soreness in the lower left side of the abdomen for two years.

Physical Findings: The heart, vessels and thorax are negative. There is more or less general abdominal tenderness, especially in the right upper quadrant and over the region of the descending colon. There is muscle resistance and distension with gas.

X-ray Findings: The stomach is normal in shape, size, position, empty in 5 hours. During twenty minutes observation nothing passed beyond the second portion of the duodenum. The first portion of the duodenum is dilated and shows pressure on the upper outer border. At 5 hours there is retention in the first portion of the duodenum, after the stomach is empty. The retention is in the lower part of the first portion of the duodenum and appears to be due to a pouch or diverticulum at that point; probably produced by adhesions around the duodenum with outpouching proximal to the adhesions. The gall bladder shows no stones demonstrable in the plates. At 24 hours the appendix is not visualized. The cecum and colon are low, otherwise they are normal and freely movable.

Case No. 13908—Mr. J. E. J. Age 46.

Diagnosis: Chronic ulcer of the duodenum; probably recent perforation which is surrounded by adhesions.

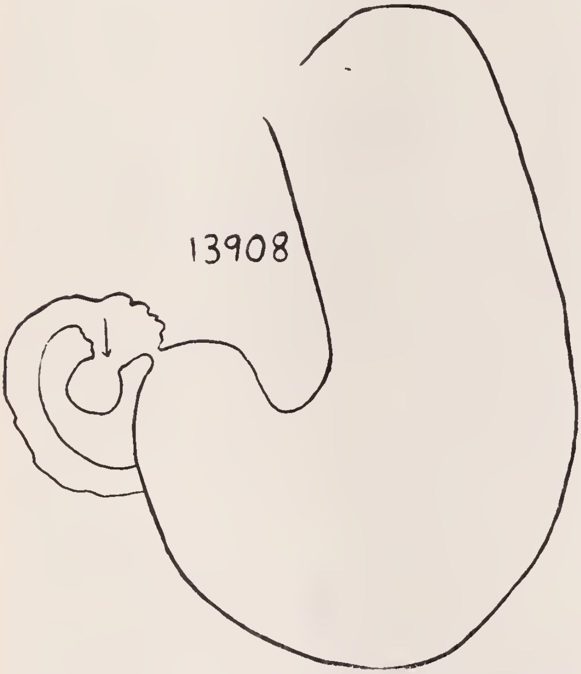

Fig. 4. Case No. 13908—Sketch from X-ray plate showing chronic ulcer of first portion of duodenum with perforation protected by adhesions. Not operated upon.

Chief Complaint: Stomach trouble.

Clinical History: Patient has been having stomach trouble for the past ten years which is worse in the spring and fall. The pain is relieved by food and alkalies. There are sour eructations but no nausea or vomiting. Recently he had severe cramps for five hours which seemed to be caused by gas in the stomach.

Physical Findings: The heart, vessels and thorax are negative. He is very tender in the epigastrium.

X-ray Findings: The stomach is normal in shape, size, position, three ounce residue at 5 hours. The first portion of the duodenum is irregular with the appearance of spasm. There appears to be a dilatation of the first portion with a constriction between the first and second portions. The gall bladder is not demonstrable on the plates. Reexamination confirms the dilatation of the first portion of the duodenum and shows a pouch projecting downward from the lower border of the first portion. The appendix is visible, not tender and freely movable. The cecum and colon are normal in contour and freely movable.

Examination three weeks later shows the stomach normal. The duodenum still shows a perforating ulcer which seems to be smaller than at the previous examination and is not tender.

Examination seven weeks later shows considerable improvement in the condition of the duodenum, the perforation showing only a small amount of bismuth.

Case No. 12396—Miss E. E. Age 29.

Diagnosis: Ulcer of the duodenum with periduodenal adhesions and probable adhesions to the cecum.

Chief Complaint: Burning pain in the stomach and backache.

Clinical History: For several months prior to removal of appendix in 1915, the patient had digestive disturbances. She was better for a while after the operation when the symptoms gradually began to return. For four years she has been troubled with burning pain in the stomach which comes on an hour after meals, radiates to the right and back and is relieved by emesis which she often produces herself. There is no nausea or vomiting except during attacks of sick headache or when produced.

Physical Findings: The throat is red. The tonsils are submerged. The heart showed a systolic murmur at the apex. The abdomen is very tender in right upper quadrant.

X-ray Findings: The stomach is normal in shape, size, three inches below the navel when standing, empty in 6 hours. The duodenum is irregular with indentation filling defect on the outer side, and tender. Probable ulcer. The cecum is not freely movable. The colon is low but otherwise normal.

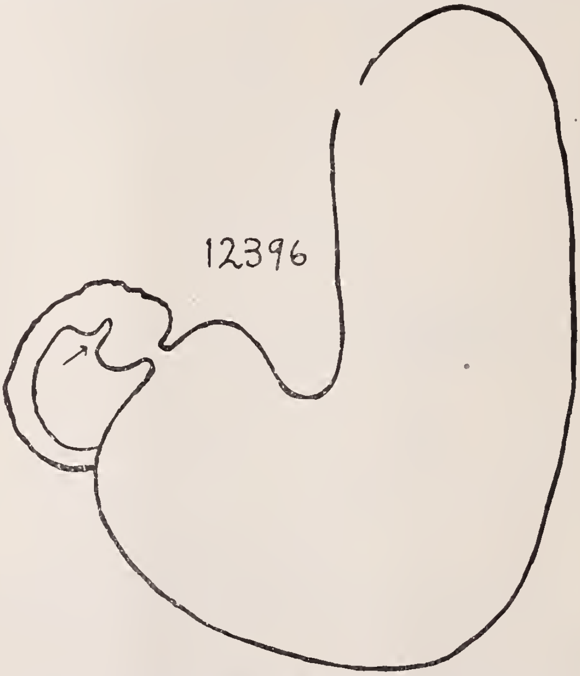

Fig. 5. Case No. 12396—Sketch from X-ray plate showing chronic ulcer of duodenum with periduodenal adhesions, causing an indentation filling defect on the inferior aspect of the first portion. Not operated upon.

Case No. 10406—Mr. I. E. M. Age 25.

Diagnosis: An adhesive band between the duodenum and cecum.

Chief Complaint: Stomach trouble.

Clinical History: The patient has had stomach trouble for four years characterized by acid eructations and indefinite pain in the pit of the stomach with loss of twenty-one pounds. There is pain on hunger.

X-ray Findings: The stomach is normal in shape and size, the lower border being at the pubes when standing; two-thirds full at 6 hours. The duodenum is normal. Reexamination confirms the above findings. A third examination, made after ingestion of the opaque meal and the patient in the horizontal position during the six hour period, shows the stomach empty. He has a congenital anomoly of the colon, the cecum being in the midline, low in the pelvis and fixed. The remainder of the colon is in the left half of the body. Probably an adhesive band between the duodenum and cecum.

Operative Findings: A band of adhesions around the duodenum which shut off the lumen when the patient was upright. Severing the band gave immediate relief to the obstruction. Patient entirely relieved of symptoms.

Case No. 11751—Mrs. M. G. B. Age 69.

Diagnosis: Cholecystitis with periduodenal adhesions.

Chief Complaint: Pain in the epigastrium with loss of weight.

Clinical History: The patient was taken ill two months previously with pain in the pit of the stomach and vomiting. She has had loss of weight.

Physical Findings: The chest is negative. There is a mass under the right costal arch.

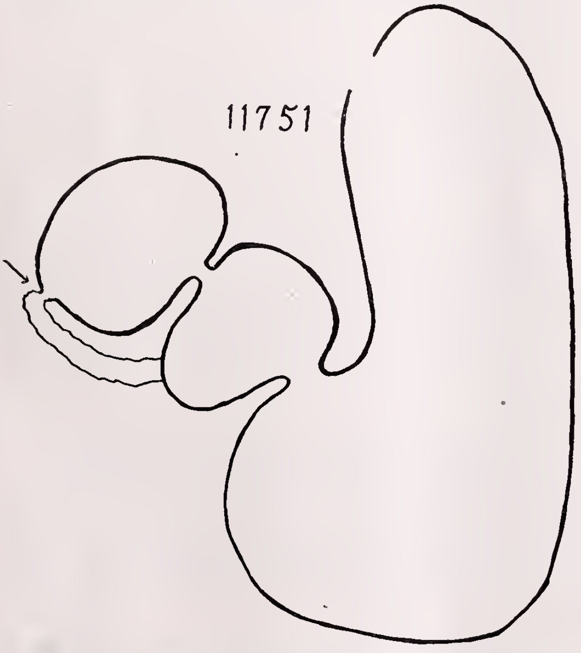

Fig. 6. Case No. 11751—Sketch from X-ray plate of patient having cholecystitis and periduodenal adhesions with partial occlusion of the lumen and dilatation of the portion proximal to the hand of adhesions. Proven at operation.

X-ray Findings: The gallbladder is enlarged and shows shadows which we think are stones. The stomach is normal in shape, size and position. None of the opaque meal had passed through the duodenum thirty minutes after ingestion. The first portion of the duodenum fills, and shows no filling defect. There are probably adhesions about the second portion of the duodenum.

Operative Findings: Infective cholecystitis with periduodenal adhesions.

Case No. 12337—Miss E. M. A. Age 32.

Diagnosis: Tension on the duodenum at the ligament of Treitz. Probable hyperchlorhydria.

Chief Complaint: Stomach trouble.

Clinical History: For eight years the patient has had stomach trouble characterized by pain in the epigastrium radiating to the back. This pain comes on about two hours after meals with periods of remission for two or three weeks. Food gives relief. There are sour eructations at times but no vomiting or nausea.

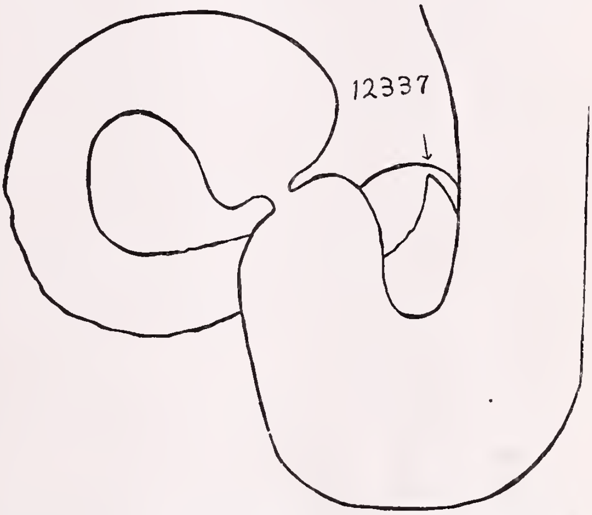

Fig. 7. Case No. 12337—Sketch from X-ray plate of patient suffering from enteroptosis which produced sufficient tension on the duodenum at the ligament of Treitz to close off the lumen and cause definite dilatation proximal to that point. Proven at operation.

Physical Findings: The heart has a systolic murmur at the mitral area which is not transmitted. Very tender in the epigastrium and to the right over the descending colon.

X-ray Findings: Stomach normal in shape and size, three inches below the navel when standing; one-half full at 5 hours. The duodenum is dilated throughout the first, second and third portions. The appendix has been previously removed. The cecum and colon are low, but otherwise normal. Probable tension on the ligament of Treitz with interference of food passing through the duodenum when in the upright position.

Operative Findings: Dilated duodenum with fluid in the stomach due to obstruction at the ligament of Treitz.

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The Treatment of Chronic Arthritis With Special Reference to End Results.*

Walter L. Bierring, M. D., Des Moines, Iowa.

A considerable number of valuable contributions have appeared in recent years on the treatment of chronic arthritis, some based on the observation of a large number of cases, yet there is no definite plan proposed that is applicable to all instances. This emphasizes the fact, which is becoming generally recognized, that each case of chronic arthritis presents special problems by itself. In this respect it resembles diabetes.

Few diseases are subject to greater confusion than those of joints, the incomplete knowledge of the same being evidenced by the variety of terms applied to the same disease. Any classification that is suggested should be as simple as possible, and for the present the term chronic arthritis is as comprehensive as any. It is possible that chronic myositis can be closely associated with it, yet a distinction should be made between them. To attempt a differentiation based on clinical signs or pathological changes is unsatisfactory, while an etiologic classification is equally confusing.

The deforming feature is not always present, and varies so in degree that it also can not be used as a criterion in all cases.

All cases of arthritis should be regarded as chronic where the symptoms have extended beyond one year.

The treatment can be considered under three heads, (1) the removal of infective foci; (2) local therapy to the affected parts; and (3) general care of the patient.

It is the consensus of opinion that practically all cases of chronic arthritis are due to some infective agent. The connection with a previous infectious process can not always be established, and the infective focus is not demonstrable in all cases, yet these exceptions do not abrogate the rule just set forth.

No disease condition has been more often associated with focal infection than arthritis in its various forms, the true appreciation of this fact being largely due to the brilliant work of Billings (1) and his co-workers. The percentage of demonstrable foci varies considerably even in the studies of large groups of cases.

It is generally conceded that the most frequent sites of focal infection as related to chronic arthritis are the teeth, the tonsils, the genito-urinary tract, the sinuses, the bronchi, the gall bladder, the gastro-intestinal tract, the pancreas and the vermiform appendix.

In Pemberton's (2) series of 400 cases studied at the U. S. Army General Hospital No. 9 a careful analysis of surgical foci gave the following results: 293 persons of the 400 cases (73.25%) showed demonstrable surgical foci. 208 (71%) of the 293 cases showing foci had the infective focus in the tonsils. 134 (45.73%) of those showing demonstrable foci were positive for a dental focus. 78 (26.62%) showed a combination of both dental and tonsillar foci. 50 (17%) were positive for a genito-urinary focus.

As regards the progress under treatment, in this series of 400 cases 34 (8.5%) recovered after the removal of foci, 31 (7.75%) were improved after the removal of foci. 28 (7%) were unimproved after removal of foci, 184 (46%) recovered in the presence of a demonstrable focus, 92 (23%) recovered in the apparent absence of a demonstrable focus.

In a thorough analysis of the results of tonsillectomy in 200 consecutive cases of myositis and arthritis, Lillie and Lyons (3), state that a marked improvement resulted in all cases after tonsillectomy. In 79% of the 200 cases dental foci were removed at the same time. These observers make the further statement that the size of the tonsil has no bearing on its possibility as a focus, and furthermore that the absence of disease of tonsils does not eliminate this organ as a focus.

Chapman (4) has reported 66 cases in which special treatment was directed towards removal of infective foci, with the result that 50% of the cases according to clinical observation showed definite improvement.

Focal infection has thus become a byword in connection with chronic arthritis, and no plan of treatment is complete that does not include the removal of all demonstrable infective foci.

The question of what constitutes pathology particularly in the tonsils and when it potentially operates as a focus of infection is a matter on which there is room for considerable discussion, and it is probable that no conclusions are entirely free from criticism.

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*Read before the Tri-State District Medical Association, Waterloo, Iowa, Oct. 7, 1920.

Dental foci, although clearly demonstrable by the radiologist are likewise open to false interpretation. The role of "dead" teeth is by no means clearly determined. We have noted marked improvement after their removal, yet even that was not entirely convincing of their causative significance.

Striking results have been observed in our service of removal of distant foci, as chronic endometritis, ischio-rectal abscess, infected ingrowing toe nail, and chronic pyelitis. Genito-urinary foci require long persistent treatment to insure appreciable results.

Gratifying though the results appear to be following the removal of infective foci, this is only a stage in the plan of treatment. The frequent mistake is made to be content with this, and conclude that further treatment is not necessary and without avail.

General systemic changes while not directly of etiologic significance must be considered as having at least a predisposing relation to chronic arthritis.

The treatment by dietary regulations as first proposed by Pemberton (5), in his hands at least, has been very helpful in a certain group of cases. In the series of 400 cases later reported by this same author, special opportunity was given for studies in metabolism.

While the basal metabolism of chronic arthritis appears to be within normal limits, a disturbance in intermediary metabolism has been frequently observed, particularly in Pemberton's study of a larger series of cases.

Pemberton states that the response of arthritics as compared with normals under similar conditions to the socalled nephritis test meal indicates a very slight lag in elimination of water, nitrogen, and particularly of salt.

In the study of 40 cases of arthritis one half showed an abnormally high value of blood creatin.

The lowered sugar tolerance was frequently observed and this has often been reported by other writers. For clinical purposes arthritis may be classed with diabetes and gout, in that there is in each case a limit of tolerance for carbohydrates on the one hand and proteids on the other.

It is frequently observed that during the fasting period incident to surgical treatment as in the removal of tonsils or the appendix a marked improvement occurs in the arthritic phenomena, which can not properly be ascribed to the surgical procedure. These observations have led to the institution of special dietary regulations as a means of therapy in selected cases of chronic arthritis.

This plan seems best adapted where a demonstrable focus of infection or definite causative agent is not present.

Draper (6) has recently presented an interesting study of patients with chronic arthritis along the line of comparison with the anatomic characteristics of acromegalics, referring to a previous study of "the relationship of external appearance of the body to disease."

French observers have previously called attention to the relation of the thyroid gland to chronic arthritis. Vincent (7) states that 68 percent of acute rheumatic fever cases have thyroid swelling. Paul Claise (8) has also reported the general "slowing down" of all functions in certain forms of chronic arthritis. Draper forms the conclusion "that chronic arthritis represents a very profound constitutional disturbance in which forces analogous to those concerned in acromegaly and thyroid insufficiency are concerned. The family and personal history which arthritic patients give of hives, angio-neurotic oedema (bee sting effects) and asthma, and in addition, the well known feature of joint involvement seen in serum disease all seem to indicate that there is a relationship between the whole group of phenomena and chronic arthritis."

In regard to the local treatment of the joints and areas affected by the chronic arthritic process, there is no measure that affords such immediate relief and comfort as general baking, usually carried out daily, with one free day each week. It relieves the pain far better than the use of anodynes, and has a good effect on the swelling and stiffness of the affected joints. As soon as acute symptoms have subsided a systematic course of massage should be instituted by an experienced masseur, and the effectiveness of this feature of the treatment will be influenced by the familiarity and experience of the masseur with the problems involved in chronic arthritis. Even where marked deformity exists through hyperplastic or atrophic changes, a great deal can be done to improve the function of individual muscles and tendons, and thus to a certain extent at least restore functional ability in the joints affected. Special orthopedic appliances are often necessary particularly where the knee joints are involved, to overcome flexion and at times promote fixation of the joint. Walking can not be carried out without great discomfort when the knee joint is partially or completely ankylosed in a flexed position. A stiff knee joint with the limb straight can be used for walking, even though it may be awkward.

As soon as it is possible and the acute symptoms have been relieved the affected joints should be used, and walking should be encouraged as soon as it can be carried out without too much discomfort.

Medicines occupy but a minor place in the treatment of chronic arthritis. The use of vaccines and the injection of foreign proteins as shown by Miller and Lusk is still in an experimental stage, and thus have but a limited place in any plan of treatment. (9)

In order to illustrate the various phenomena that may accompany chronic arthritis, and in a sense typifies the condition, the history of one case is presented.

A young woman 21 years of age, Miss X, first appeared for examination January 7, 1919, presenting an arthritis history of 2½ years duration, involving principally the knee and ankle joints. The tonsils and one dental focus were removed during this time. She was admitted to the Medical Service of the Iowa Methodist hospital and remained until May 4, 1919. A moderate thyroid enlargement was noted at the beginning, and soon after admission the signs of hyperthyroidism became very marked, continuing during the first four months stay in the hospital. While this condition gradually subsided with rest and appropriate sedative measures, it seriously interfered with the carrying out of the usual therapy for the chronic arthritis. A moderate leucocytosis, 11,000 was present. A low grade of fever continued, and a lowered sugar tolerance was noted at different periods.

The patient returned to her home for the summer, and reentered the hospital on July 21, 1919. The arthritic condition was more distressing as additional joints were involved and she was unable to walk, but the signs of hyperthyroidsim had practically disappeared. A pyuria was noted, and the urinary findings indicated a nephritis.

An examination of the nasal accessory sinuses by Dr. Pearson was negative.

On Aug. 13, 1919, an infected tooth was extracted, which led to protracted bleeding, which continued ten days before it was finally arrested. The coagulation test showed no coagulation at the end of an hour and a half. The arthritic condition was distinctly improved following this, and the signs of infection of the urinary passages disappeared.

On Sept. 9, 1919, two dental foci were removed followed by nine days of bleeding from the gums; the coagulation time was fixed at two hours.

Oct. 4, 1919. Blood condition—Hgb. 60%, red cells 2,730,000, leucocytes 9,400. Polymor phonuclears 60%, lymphocytes 34%, basophiles 1%, eosinophiles 2%, transitional 3%. Coagulation time two hours. At this time two hours.

Oct. 10, 1919. Because of the secondary anemia and prolonged coagulation time, a transfusion was carried out, a sister being the donor. The blood state improved following this transfusion.

Oct. 19, 1919. One infected tooth was extracted followed by moderate bleeding.

Nov. 20, 1910. Blood state—Hgb. 60%, red cells 4,330,000, leucocytes 13,000. Differential—polymorphonuclears 67%, lymphocytes 29%, transitional 4%.

Dec. 2, 1919. Began to walk. General condition better. Urine clear.

Jan. 6, 1920. Blood state—Hgb. 70%, red cells 4,379,000, leucocytes 10,200.

Jan. 15, 1920. The last suspicious dental focus was removed. No bleeding followed. The radiographic findings of the teeth were not conclusive of an infective focus, and only after extracting the first one, which was a so-called dead tooth, and such marked improvement followed extraction, that led to the belief that the other dead teeth might be a source of infection in this particular case. In the endeavor to control bleeding following extraction of teeth, coagulose was used, and each time was followed by a short period of angio-neurotic oedema.

Jan. 28, 1920. End of daily fever. Weight better. Improvement in walking, which im-pyuria reappeared. Renal function 20% improved until leaving the hospital, April 10, 1920, completing a stay of nearly thirteen months.

The problem throughout was the element of infection and each time that a focus was removed or cleared up there was a lowering in the leucocyte count, less fever, less distress in the affected joints and improvement in the general condition. The infection manifested itself as periodic pharyngitis, cystitis, nephritis, and infected teeth. As further complicating the condition was the attending hyperthyroidism, angio-neurotic oedema, impaired coagulation, with associated bleeding tendency and marked secondary anemia, lowered renal function and sugar tolerance.

In spite of all the outcome was very gratifying both as to the general state and the arthritic condition.

The case typifies the varying phases of chronic arthritis and the happy result possible by the faithful cooperation of the patient and coordination of all possible remedial measures.

There can be no question but that the essential factor in all forms of arthritis is an infective process, although it may not always be clearly demonstrable.

While the removal of the infective foci should be of first importance, the general care of the patient should have an equal place in any plan of treatment. Every case is a matter of individual study. Much depends upon the attending physician. His heart must be in it, and this interest must be manifest at all times, if the fullest confidence of the patient is to be secured. The handling of chronic arthritis resembles in many ways the care of a neurasthenic patient.

Chronic arthritis can only be properly treated in a hospital where every facility for examination is available and all possible forms of therapy can be properly carried out.

These cases naturally come first to the attention of the orthopedist, yet the problems involved in diagnosis and treatment bring them properly within the sphere of internal medicine, although the advice and cooperation of the orthopedic surgeon is a necessary factor in the successful treatment.

Chronic arthritis is one of the most distressing disease conditions and frequently appears quite hopeless, yet every case offers some possibility of improvement, and any relief of pain and discomfort, partial restoration of joint function, arrest of the process, and improvement in the general state means so much to this class of patients and is worthy of our very best efforts.

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The Diagnosis and Treatment of Weak and Flat Feet.

W. Eugene Wolcott, M. D., Omaha.

The proper diagnosis and choice of treatment for the various degrees of weak and flat feet often proves quite confusing because of the apparent lack of relationship between the degree of deformity and the disability.

Before we can hope to treat successfully the different varieties of weak feet, we must acquaint ourselves with the mechanism and function of the normal foot. Once this information is well in mind, it will be comparatively easy to recognize the deviations from normal, however slight, and to institute preventive or corrective treatment with some degree of accuracy.

First of all, the foot should be regarded as a mechanism which has a two-fold function; it should act first as a passive support for the body weight, and second as a lever when in action to lift and propel the body. Routine examination of every case suspected of having weak feet, then, should not be restricted to a superficial examination of the foot when at rest, but should also include the inspection of its ability to withstand the stress of passive weight bearing and an observation of its functional ability when in action. As the result of such an examination carefully executed, we should be able to estimate the degree of structural and functional change which has taken place.

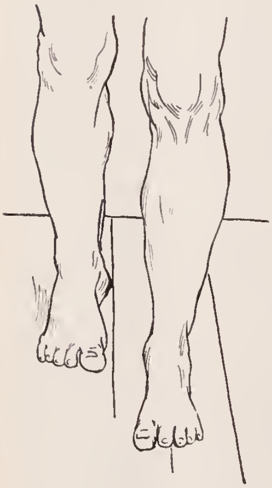

FIG. 1.

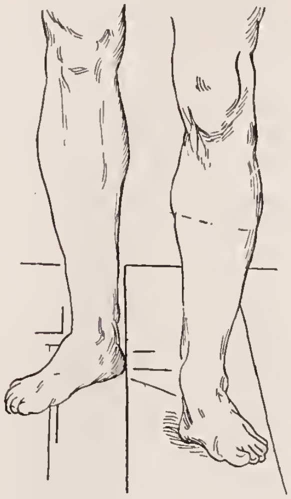

FIG. 2.

Fig. 1:—Illustrates normal adduction of the fore-foot in proper gait. Adduction due to obliquity of the bearing surface of the metatarsus. This protects the weaker inner border of the foot from strain by throwing the major portion of the weight on the stronger outer border of the foot. (After Whitman.)

Fig 2:—Showing outward rotation of the limbs and abduction of the fore-feet with depression of the arches. As a result, normal leverage and elasticity of the foot is sacrificed, and the weight is thrown directly upon the inner border of the foot. (After Whitman).

Examination of the Foot at Rest.

This should include first an inspection of the general contour of the foot; second, a careful study of the voluntary range of motion; third, testing of the degree of muscle spasm and resistance offered by contracture in tendons, etc., and fourth, a search for calluses usually associated with improper weight bearing.

Contour.

The normal foot has two arches, the longitudinal and the anterior or transverse arch. I think I am safe in saying that as a rule too much importance is placed upon the height of the longitudinal arch which may vary greatly within normal limits. It is vastly more important to note any change in the normal contour of the inner border of the foot. Normal feet placed side by side with the toes and heels touching, should present a slight concavity along the inner border of each, greatest of course, at the astragaloscaploid articulation. If this concavity is obliterated or becomes a convexity, especially upon weight bearing, the foot is weak. This change in contour is the earliest and sometimes the only evidence of deformity, and too little attention is paid to it.

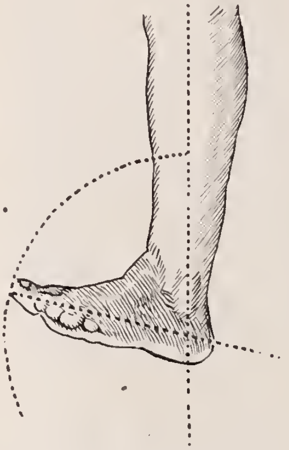

FIG. 3.

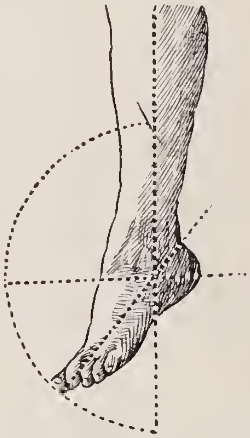

FIG. 4.

Fig 3:—Normal limit of voluntary dorsal flexion usually up to 10 or 20 degrees less than the right angle. (After Whitman).

Fig. 4:—Normal limit of voluntary plantar flexion 50 to 60 degrees more than a right angle. (After Whitman).

Normal Range of Motion.

Impairment of the normal range of motion is another one of the early signs of improper attitude and weak feet. However, this also varies considerably within normal limits, being greater in childhood and in the long,

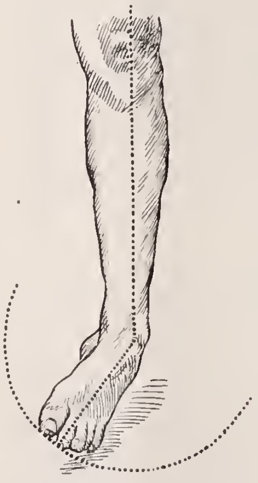

FIG. 5.

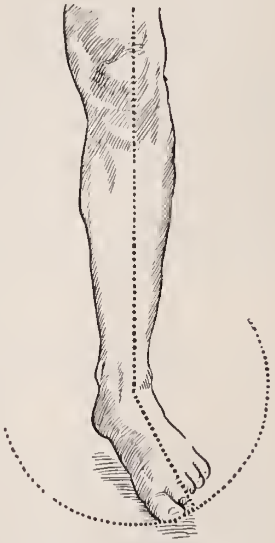

FIG. 6.

Fig. 5:—Illustrates the normal range of voluntary adduction. It is important to note the degree of voluntary adduction, for a loss of power in this direction, is one of the earliest signs and often the only one present, in acute foot strain. (After Whitman).

Fig. 6:—Normal range of voluntary abduction of the foot, normally about one-half the limit of adduction. (After Whitman).

slender foot, than in one which is stout and massive. Dorsal and plantar flexion should vary from 50 to 60 degrees; that is, dorsal flexion up to 10 or 20 degrees above the right angle and plantar flexion or extension of the foot downward to 40 or 50 degrees beyond the right angle. By far the most important of all of the movement tests, is that for adduction of the fore-foot. This is normally about 30 degrees and it should be remembered that the mildest weak foot usually shows some impairment of this function. Abduction of the foot is less important and should normally be from 15 to 20 degrees or about half that of normal adduction.

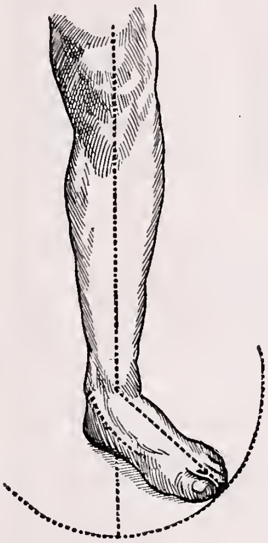
FIG. 7.

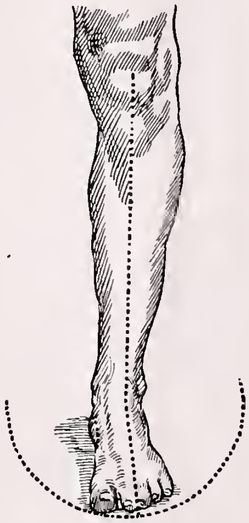
FIG. 8.

Fig. 7:—Illustrates abduction of the fore-foot and loss of the proper alignment of the patella, ankle and foot, due to a tilting downwards and inwards of the astragalus and os calcis. This faulty posture can be voluntarily corrected as illustrated in Fig. 8, provided there is no shortening in the peronei muscles or muscle spasm to prevent. (After Whitman).

Fig. 8:—Shows proper alignment of knee, ankle and foot. A line dropped from the patella passes through the center of the ankle, and if projected forward, should pass out through the second toe. This drawing illustrates the restoration of normal contour of the longitudinal arch by adducting the fore-foot into normal alignment with the leg. (After Whitman).

We should keep in mind the fact that flaccid weak feet may show normal or even excessive mobility in all directions, but the true pathology will become immediately apparent in these cases upon weight bearing.

Muscle Spasm and Resistance.

The resistance offered to passive motion is another index to the degree of weak foot. It may be due to muscle spasms, nature's method of protecting painful articulations, or to contracture in tendons, fascia, and muscles, the result of habitual faulty posture. The degree of muscle spasm and rigidity is in direct proportion to the intensity of the symptoms and indicates the degree of local congestion but has no relation to the degree of the depression of the arch or with the duration of the deformity.

Calluses.

These are usually seen about the fore-foot and are the result of faulty posture and abnormal points of pressure usually associated with anterior arch trouble.

Inspection of the Passive Weight-Bearing Foot.

This should include:

1. An observation of the relationship of the alignment of the foot, ankle, and leg.
2. The effect of weight bearing upon the general contour of the foot.

Given a patient standing correctly, a line passing downward through the center of the patella, leg and ankle if projected forward, should pass over the second toe. This is the best posture in which to withstand prolonged passive weight bearing, because in this position the weight is most evenly distributed throughout the entire foot.

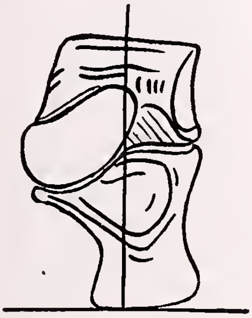
FIG. 9.

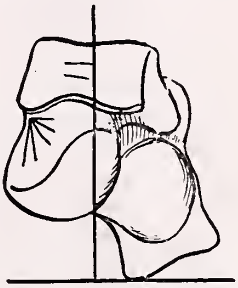
FIG. 10.

Fig. 9:—Normal relation of the astragalus to the os calcis. (After Whitman).

Fig. 10:—Illustrates the relation of the os calcis and astragalus in flat-foot. (After Whitman).

When the foot is in action, it is largely supported by muscles, but when it is serving simply as a passive support, the ligaments bear the brunt of the strain and the elasticity of the ligaments allows the bearing surface to expand as the arches are depressed. Prolonged standing, especially if in an improper posture, results in strain, relaxation and permanent stretching of supporting ligaments, and deformity, the deformity being the direct result of the relaxation which permits rotation of the astragalus bearing the leg, inward and downward upon the os calcis. If this condition of affairs is not corrected, there will result a distortion in the relationship between the astragalus and the os calcis, a tilting downward and inward of the os calsis, obliteration of the concavity on the inner border of the foot, a depression of the longitudinal arch and an abduction of the forefoot. If we examine such a foot further, it will be found that the foot is not flat because of the sinking of the astragalus, but that the lowered arch is due to lateral displacement, abduction of the fore-foot. This fact may be demonstrated by simply adducting the foot to its normal position with relation to the leg, a movement which will restore the normal contour of the foot.

Examination of the Foot in Action.

During this part of the examination we should notice:

1. The relationship of the foot to the leg when serving as a lever.
2. The flexibility of the foot.
3. The degree of rotation of the astragalus and os calcis in relation to each other.

In walking, the foot serves as a lever to raise and propel the body. The power to accomplish this is furnished by the calf muscles acting over the heads of the metatarsal bones which serve as a fulcrum on which the weight is lifted. The foot then should be in such relation to the leg that the line of weight projected downward from the knee and ankle will fall though the second toe or practically the center of the foot. If it falls inside of this line, that is, if the forefoot is turned outward, the weight will be received directly on the inner border, which is the weakest portion of the foot. In the proper walk, if noted from behind, the feet are held practically parallel with one another, so that the line of weight will fall through the center of the foot. As the foot is advanced, the weight is first received upon the heel, then upon the outer or strong border of the foot, and as the heel is raised and the body is lifted over the toes, because the inner border of the foot is longer, the great toe gives the final push and the ankle rotates slightly outward, giving the impression of a slightly pigeon-toed gait. It can be easily understood how impossible it is for the foot to act as an efficient lever when abducted outside the line of direct weight bearing. An observation of the flexibility of the foot in action will assist us in properly classifying the disability. We should note the amount of elasticity of the ligaments, the degree of depression of the arches, and the abduction of the fore-foot, as well as make careful note of any change in contour of the concavity of the inner border of the foot, especially in early cases.

Tilting inward and downward of the os calcis can perhaps best be noted by an observation of the foot when in action from behind. When standing there will be a slight angulation of the line of the os calcis and tibia, and just as the heel leaves the floor this angle will be exaggerated with the sinking downwards and inwards of the os calcis and the rotation of the astragalus. This phenomenon is usually associated with well advanced cases only.

Classification of Weak Feet.

This method of examination will enable one to recognize several grades of weak feet. For convenience we may group them into four classes according to Whitman:

1. The normal foot improperly used.

2. The weak foot, which, because of laxity of ligaments or insufficient muscular support is forced by the body weight into an attitude of deformity, but still retains full voluntary control.

3. The weak foot with typical deformity plus restriction of voluntary motion, particularly in plantar flexion and adduction.

4. The rigid weak foot which presents typical and persistent deformity, whether in use or not, and in which the range of both voluntary and passive motion is much restricted.

Treatment.

The application of the principles of treatment intended to cure permanently these various types of weak and deformed feet will vary considerably with the degree and duration of the deformity.

The primary object of treatment will be to restore normal contour, habitual proper attitude, and voluntary power. The first step in all cases will be then to correct deformity and restore passive motion up to the normal limit by overcoming mechanical resistance whenever present. Once passive motion and normal contour have been restored, we must support the foot to prevent recurrence of the deformity until by active exercise and muscle reeducation, the voluntary muscle power of the foot is reestablished.

Since the method of accomplishing this end will vary in each type of foot, the treatment of each grade will be taken up in succession.

The Normal Foot Improperly Used.

Improper use of the foot results in acute foot strain and discomfort. In these cases if the method of standing and walking is corrected the symptoms will disappear. Such patients should be instructed to stand and walk with the feet parallel so that the strain will be evenly distributed throughout the foot and away from the inner border. If the inner border of the sole and heel of both shoes are raised one-fourth of an inch it will assist materially in correcting toeing out. If it is noticed upon examination that there is a beginning of the loss of the concavity on the inner side of the foot, or abduction of the forefoot, the deformity should be corrected by adhesive strapping which will hold the foot in adduction. This may be accomplished by applying an adhesive strap about fifteen inches long and three inches wide, beginning on the outer side of the ankle just below the malleolus, and as the foot is sharply adducted and held at a right angle with the leg, the strapping is brought around very tightly beneath the sole and up the inner side of the arch and leg almost to the knee. This is held in position by circular adhesive straps about the calf and ankle and up over the instep.

To strengthen the weakened muscles of the foot in these cases, daily exercises should be given. Since it is the adductors and plantar flexors which need particular attention, the Whitman toe exercises are especially valuable. The patient standing with the feet side by side in an attitude of slight adduction, raises the body on the toes to the extreme limit, keeping the knees straight, then sinking slowly until the weight rests on the outer border of the foot, in the attitude of marked varus. This should be repeated twenty to one hundred times daily. If these exercises are faithfully done, and the faulty walking and standing are corrected by strapping and proper shoes, a permanent cure can be expected in a very few months in this class of cases.

The Treatment of Flaccid Weak Feet.

These are the type of weak feet which, because of the laxity of ligaments or insufficient muscular support, are forced by the body weight into an attitude of abduction deformity but in which there still persists voluntary control and no mechanical resistance to motion in any direction.

Such feet require vigorous exercises as described above, to strengthen weakened muscles, and elevation of the inner border of the shoes to help overcome abduction and to throw the weight away from the inner side of the foot, also support in the form of a foot plate or brace to hold the foot in proper position and relieve discomfort. Directions for corrected shoes, exercises and proper standing and walking should be given identically the same as directed in the first group. In addition we must supply support in this classification because these patients are unable to prevent deformity, voluntarily. We should remember that the deformity is due to the lateral displacement of the forefoot and secondarily a sinking of the arch, therefore, a brace to be efficient, must hold the fore foot from lateral displacement as well as support the arch. It must not, however, interfere with the normal motion of the foot which is necessary to develop the weakened muscles so essential to the ultimate cure. The ordinary arch support secured upon the market is intended to lend support by direct pressure from beneath with no provision for correction of the lateral deviation. This is, however, provided for in the Whitman brace, which is a foot plate made of 18-20 gauge steel, possessed of both an outer and inner flange which grasps firmly that portion of the foot back of the mid-tarsal joint. The inner flange protects the astragalo-navicular junction and the outer covers the calcaneo-cuboid junction and outer aspect of the foot to a height sufficient to hold the foot securely. The sole part of the plate provides a firm and comfortable support for the foot and is of suffi-

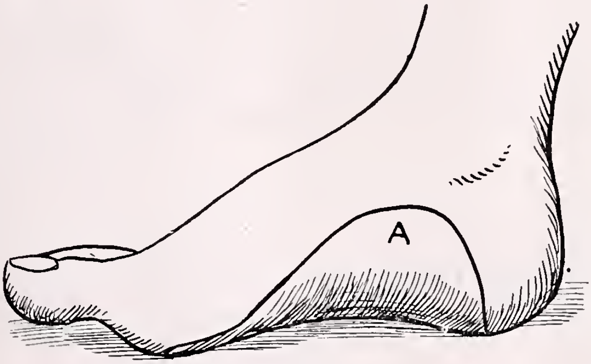

FIG. 11.

Fig. 11:—Outline of the Whitman plates inner side. The inner flange of the plate should protect well the astragalo-navicular articulation, extending above the prominent bones to a point one-half inch below the inner malleolus. (After Whitman).

cient height to act as a fulcrum over which the forefoot is adducted or rotated inward with each step. This serves to exercise and develop the foot muscles. The flanges are so constructed that they grasp firmly the os-calcis and prevent it along with the astragalus from rotating downward and inward. If this rotation is prevented, abduction of the forefoot and depression of the arch is impossible. This plate then possesses a positive corrective action; it prevents abduction of the forefoot and depression of the arch, encourages the proper attitude of slight pigeon toe in walking and provides for active exercise of the foot muscles, thus filling all the requirements of an efficient support.

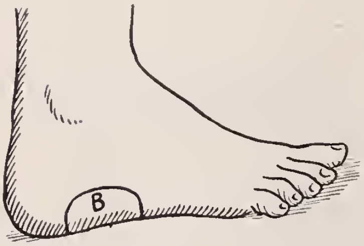

FIG. 12.

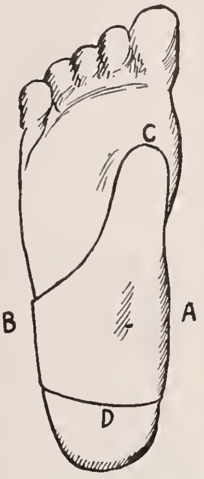

FIG. 13.

Fig. 12:—B, the outer flange at the calcaneo-cuboid punction. This flange helps to prevent the tilting inward and rotation of the os calcis. (After Whitman).

Fig. 13:—Shows the outline of the sole plate of the Whitman plate. (After Whitman).

Flaccid weak feet are the most resistant type of all to treatment. It is necessary to continue the use of the plates and treatment until the relaxed ligaments and weakened muscles have regained their normal tone and the tendency to recurrence of deformity has been, by restored power and tone, overcome. This time will vary from six months to two or three years, depending upon the degree of deformity.

The Treatment of the Weak Feet Possessing Moderate Rigidity.

This rigidity may be due to one of several causes. Inflammation about articular surface with resulting muscle spasm, contracture of tendons due to prolonged faulty posture, etc. If there are evidences of arthritic changes the cause or focus of infection should be sought and eradicated. Marvelous results are frequently observed as a result of recognizing the importance of this phase of treatment. If the rigidity is due to contracture of soft parts, our first task will be to overcome this. In the mild cases this can be accomplished in a few weeks by strapping of the feet and elevation of the inner border of the shoes. As the rigidity begins to disappear, it gradually becomes possible for the patient to execute the foot exercises prescribed above. When the foot becomes supple it is time to provide the Whitman plate which will carry on the treatment. A rigid plate cannot be tolerated until all muscle spasm and resistance is overcome, and should not be prescribed until resistance is corrected.

The Treatment of Rigid Flat Feet.

Feet fixed in a deformed position by muscular spasm and secondary changes in and about the articulations usually produce practically complete disability. Such cases although often considered hopeless so far as permanent relief is concerned, do respond very satisfactorily if the patient will submit to the character of treatment which the condition requires. The deformity must first be corrected and this requires a manipulation of the foot from the abducted flat foot position into full normal adduction and inversion of the forefoot under an anesthetic. It is usually necessary to divide the contractured peronei which prevent adduction, and also at times the tendo-Achilles, in order to permit the equinus to be overcome. Plaster of Paris dressings are applied to maintain the corrected position for at least three weeks, the patient being permitted to walk after the first week.

When the plaster dressing is removed it will be found that the feet are stiff and rigid. This should be overcome by baking and massage, active and passive motion daily, the feet being kept bandaged for a few days to prevent more swelling. Systematic manipulations and adhesive strapping are then carried on until the rigidity and swelling have been overcome and painless passive motion is possible in all directions. From this point on the treatment does not vary from that prescribed in the classification just preceding. These patients must be made to understand that there is always danger of relapse unless they continually strive to attain full voluntary adduction.

If this can be accomplished and proper shoes and plates are provided, and improper gait and postures are avoided, the most gratifying results may be expected.

Under Criticism.

Taking some one else's word for it that we are making mistakes is one of the hardest accomplishments human beings acquire. Even when willing to acknowledge an actual fault, we are inclined to disbelieve that we have committed it. We cannot see ourselves as others see us, yet we dislike to take another's word for it. How foolish such an attitude may become is shown in the experience of many a football and baseball player. Managers and interested friends told them that they were playing too high or standing incorrectly at the plate, but the subject of criticism refused to believe it. Yet when a photograph of themselves in the criticized positions was shown to them, they were compelled to acknowledge their fault. Their friends had been right after all. Why must we wait "to be shown," before we are willing to confess we are wrong? A good rule for anyone is this: Find a trustworthy friend, seek his opinion as to any mistakes you may be making, then believe him.

Young Men And Marriage.

Whether or not H. C. L. is going to make marriage a prohibitive luxury to fifty per cent of our young men, Walter Gallichan, the English authority on sex education, expresses the desirability of the married state in no uncertain terms in his new book, "Letters to a Young Man on Love and Health" (Stokes.)

"Out of 100,000 persons from twenty to eighty-five the deaths of the single far exceeded those of the married. From twenty-five to thirty there were 1,369 deaths amongst the unmarried, against 865 among the married. The unmated were more numerous among the insane than the married. Crime is commoner among celibates than the married. These facts show plainly that conjugality is a healtheir state of life than celibacy."

Tuberculosis in its various forms caused 122,040 deaths, of which 108,365 were due to tuberculosis of the lungs. The death rate from all forms of tuberculosis was 149.1 per 100,000, and from tuberculosis of the lungs, 132.4. The rate from tuberculosis of all forms declined continuously from 200.7 per 100,000 in 1904 to 141.6 in 1916, the decrease amounting to nearly 30 per cent; but for 1917 and 1918 increases are shown, the 1918 rate being somewhat higher than the rate for 1917, when it was 146.4. Until 1912 more deaths were due to tuberculosis than to any other single cause, but in that year and during the period 1914-1918 the mortality from tuberculosis was less than that from heart diseases.

"The brain is overseer, the body is laborer. Under proper training the laborer becomes automatic, and the overseer can attend to other things." There is a deal of useless labor saved by learning the right way of doing things in the beginning. Few of us know how to make the most of the powers that have been given us. We waste time and bodily strength in uncertainty and lack of skill; we waste brain force by lack of decision and failure to concentrate; we waste spiritual power by indefinite aims and idle dreams.

A retail dealer in buggies doing business in one of the larger towns in northern Indiana wrote to a firm in the East ordering a carload of buggies. The firm wired him:

"Cannot ship buggies until you pay for your last consignment."

"Unable to wait so long," telegraphed the buggydealer; "cancel the order."

Camphor production is the most interesting industry of the island of Formosa. This island is said to hold "a practical monopoly in the world's market of this valuable drug." A single average tree will yield about five thousand dollars' worth of camphor.

Most grown people fail to drink enough water. They haven't the habit and so forget. Water helps to carry away poisons from the blood. It is one of nature's gifts.

A friendship that costs nothing is usually worth just about that much. Loyalty, unselfishness, and faith are the price we must pay for every life we bind to our own if we would hold the precious possession.

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Preparing Manuscript.

Our publisher in a communication says one reason why no money is made on the Journal by the printer is that those who have articles insist on editing them after the proof has been furnished.

This is a serious indictment of the profession and may be better understood by citing a concrete example. During the last year a manuscript of less than 800 words was offered to the Journal (and published) containing errors of omission and commission as follows: Mistakes in spelling, mostly of scientific terms, fourteen; lack of capitals, five; lack of punctuation, two; wrong punctuation, four; unnecessary words, three; unnecessary phrases, two; wrong words, five;—total errors, forty. It has always been the policy of the editorial office to correct manuscripts before sending them to the printer and but few have been overlooked, but the editorial office should not be expected to remake and rewrite manuscripts.

Authors should take the same pride in the preparation of their manuscripts as they do in their scientific work.

The Slaughter of The Innocents.

Two members of the medical profession in the State of Nebraska are charged with murder. One is under indictment and awaiting trial in Lincoln; the other, a former member of the Omaha-Douglas County Medical Society, has been adjudged guilty of causing the death of a girl on whom he is alleged to have performed a criminal operation and an indeterminate sentence of one to ten years in the State penitentiary has been passed upon him.

In the light of these cases the medical profession of Nebraska would do well to consider seriously some of the phases of the subject of criminal abortion. We should know what constitutes a criminal abortion in contradistinction to therapeutic abortion; we should inquire as to the extent of this nefarious practice; we should ask ourselves who are the offending parties; we should know the law relating to criminal abortions; we should know how best to protect ourselves against unjust accusation when called upon to treat these cases after they have passed from the hands of the abortionist and finally we should inquire into the responsibility of the profession in view of the widespread prevalence of this social plague.

The civil law clearly recognizes the right to interrupt pregnancy before the period of viability when the life of the mother is jeopardized by an existing pregnancy. To interrupt pregnancy prior to the period of viability for any reason whatsoever other than to safeguard the life of the mother is a moral, ethical and legal crime. Yet in spite of all civil and ecclesiastical law this heinous crime has stealthily increased from the dawn of civilization to the present time.

We are told that one in five or six pregnancies ends in abortion and that 50 percent of all abortions are criminal. It has been estimated that in New York City alone there are 80,000 criminal abortions annually. The practice exists in all parts of the globe and infests all grades of society. Indeed, it would appear that this social plague is more prevalent in the higher classes of society. Women of keen moral sensibilities either commit the act themselves or seek aid from others with little knowledge of the dangers involved and with conscience undisturbed. This is so because of ignorance. They know little of the pitfalls involved in the undertaking and they are possessed of the sentiment prevalent among the laity that there can be no life until fetal movements are felt. To illustrate how difficult it is to convince the lay public that life begins at the moment of impregnation the eminent German naturalist, Ernest Haeckel, relates how he once made this assertion to an eminent jurist only to be laughed at. We often find women of unquestioned moral standing bitterly resenting their state of pregnancy and determined to put an end to the whole affair yet when the date of quickening arrives and they are conscious of sheltering and nourishing a human life, their viewpoint is completely changed and from that moment to the date of birth they live in happy expectancy.

But what of the professional abortionist who for a few paltry dollars will destroy a potential human life and place the life and health of a mother in grave danger? The woman abortionist who plies her trade under the guise of a midwife, the charlatan who covertly or openly advertises in the daily press and the physician of high or low degree who prostitutes his profession all alike ply their nefarious trade unabashed and unrestrained for not one in a thousand is ever held accountable for the crimes he commits. This is so partly because of the technical difficulties in getting evidence admitted in the courts, partly because the individual who knows will not tell, partly because of embarrassment to any individual in filing a complaint but it is so more than all else because organized medical associations have not taken definite and determined steps to rid the profession of these criminals and educate the lay public in the danger involved in the practice of committing abortions. Lombrose, the great criminologist, says that "abortions in the United States have become so common that instead of being regarded as a crime, it is a laudable and justifiable means of limiting the size of families." And Lyons says "if concerted action be taken against these men by the profession at large the evil might easily be overcome. The most of them are arrant cowards, and as soon as they realize that men of undoubted professional reputation and standing are determined that they should cease plying their nefarious calling they will stop." Be that as it may we must admit that the profession assumes a grave responsibility when this most universal of crimes receives from its hands little more than passive condemnation. If we are to merit the respect and confidence imposed in our profession a determined campaign must be inaugurated by our medical organizations to the end that the ignorant may be enlightened and offenders within our ranks brought to the bar of justice. It is futile for the profession to pass the buck to our civil authorities and it is not fair to assume that it is the business of individual members of the profession to handle the situation. The civil authorities may be depended upon to do their part and the individual member of the profession, however courageous, will find little encouragement and much embarrassment if he fights alone. The individual may be charged with ulterior motives but when action is taken by an organized medical association of the dignity of our state and county medical societies the affair becomes impersonal and cannot fail to impress the public and the courts with the seriousness of the charge.

Because of the grave responsibility imposed upon the induction of abortion it is provided by law that one or more consulting physicians shall be employed and shall agree upon the indication for the interruption of pregnancy. This is wise not only in the interest of the patient but for the protection of the physician on whom the responsibility rests. But what are the safeguards to be established to protect the physician who is called to attend a woman on whom a criminal abortion has been performed and who may be in a critical condition? The position of the physician in these cases is disagreeable; it is embarrassing and may prove disastrous to him if he fails to fortify his position with moral safeguards. He is charged with the double responsibility of doing all that can be done for his patient and of protecting himself against unjust accusation. He cannot afford to disregard the town gossip; neither should he fail to protect himself against the real offender who would eagerly embrace the opportunity of shifting the responsibility for the misdeed. To this end, it would be a good rule to adopt that on the approach of such cases a consultant should be called to share in the initial examination and to witness the statement of the patient. The statement of the patient should best be in writing and should comprise a recital of her known condition prior to the abortion; of when the operation was performed; where it was performed; how it was done and by whom it was done. It is common experience that the patient will tell all she knows when made to realize her danger and a double purpose is attained—the physician in charge is protected and the guilty party is revealed.

Through the courtesy of County Attorney Shotwell of Omaha, there is appended herewith the law which now appears on our statutes relative to the subject in hand.

Section 8584, Revised Statutes of Nebraska for 1913, provides as follows:

"Any physician or other person who shall administer, or advise to be administered, to any pregnant woman with a vitalized embryo, or foetus, at any stage of uterogestation, any medicine, drug, or substance whatever, or who shall use or employ, or devise to be used or employed, any instrument or other means with intent thereby to destroy such vitalized embryo or foetus, unless the same shall have been necessary to preserve the life of the mother, or shall have been advised by two physicians to be necessary for such purpose, shall, in case of the death of such vitalized embryo, or foetus, or mother, in consequence thereof, be imprisoned in the penitentiary not less than one nor more than ten years."

And Section 8585 provides:

"Any physician or other person who shall wilfully administer to any pregnant woman any medicine, drug, substance, or thing whatever, or shall use any instrument or other means whatever, with intent thereby to procure the miscarriage of any such woman, unless the same shall have been necessary to preserve the life of such women, or shall have been advised by two physicians to be necessary for that purpose, shall be punished by imprisonment in the county jail not more than one year, or by fine not exceeding five hundred dollars, or by both."

P. F.

An Issue

For a few years preceding the World War the attention of medical men was more or less frequently engaged in trying to satisfy, to themselves, the trend of modern scientific medicine. We were told by some that medicine had developed to what it was, along individualistic lines, and for the sake of the doctor he should be allowed to follow his individualistic way. To do otherwise would take away his initiative and his incentive to do not only his daily work but also would take away his incentive to work for the advancement of his science. Others, however, would tell us that due to a newer field in medicine which was developing, that of preventive medicine, we must expect and hope for the socialization of medicine or this work could not be carried on and that eventually we must all expect to become government officers. During this time the States had their departments of health and the National government had its Bureau of Health, both of which were loosely organized and did not have much power. Both functioned practically independently of each other.

Then came the World War which we as a nation watched with at least nominal neutrality for several years; hearing a great deal of autocracy and paternalism and the wonderful efficiency of this form of government. How with a central head taken over by the government and arranged and maintained with great precision. Also from the other side we heard of the ideals of democracy where it succeeded and where it failed. Practically everyone agreed that to wage a war successfully great power must be given the central government. This was finally done by the Entente Allies and about this time America entered the war. Almost unanimously our president was made the most powerful ruler on earth. At the end of the war, with the coming of readjustment, this old paternalistic doctrine became, if anything, more discussed than ever. Our central government did not seem inclined to give up its power. This caused much bitter discussion. All of this has gone to a point now, where it assumes the aspect of a national issue. The subject of paternalism is discussed universally. It would seem from the opinions heard that we were in danger of being made a Germany of the old order.

To the writer it seems that a very vital point is usually missed when this subject is up. That is, that both paternalism and socialism have the same great end in view, which is the control of all things by the government. They differ as to method. To the paternalist there are a select few born to rule and the common mass born to be ruled. The rulers are under no responsibility to the ruled. To the socialist the government should control in the same way, but the government is responsible to the masses, who can overthrow the government when they desire. The writer thinks that if this country is in danger from either condition, that it is the latter.

However, as both the National and State Governments have been moving they have taken over many phases of medicine that were until quite recently left to the individual. As a result of this and as a reaction against the war conditions, much discussion is going on as to what should be done. Many say that State Medicine will be a good thing. Many of the former argue that we should discontinue what our State has already done. Others say strengthen the State Department. This all indicates that we have a big problem before us and that everyone of us should inform himself as thoroughly as possible on this subject and then act as he has made his decision.

R. B. A.

Nebraska In The Vital Registration Area.

Those interested in vital statistics must feel considerable pride in the announcement made by the Chief of the Bureau of Health that Nebraska has been admitted into the registration area for vital statistics. The leaders of the organized profession, more particularly the older "warriors" know how much effort it has cost and how many years have elapsed since the first effort was made to bring this about.

The efforts of all the state health officers of recent years have been directed toward this achievement; but it remained for the masterful activity of the present chief, Dr. I. H. Dillon to consummate it.

Legislative Note.

Up to the date this goes to the printer there have been introduced bills of interest to the medical profession as follows: That regular graduates of medicine shall be given licenses without examination; to regulate maternity hospitals; to regulate childrens' homes; to license midwives; marriage law requiring medical examinations of both parties; forbidding the sale of venereal disease "cures," restricting sale of poisons; stringent rape law; sterilization of rapists; new incest law; concerning illegitimate children.

Clinical Notes.

Typhoid Fever? — Preliminary Note.

By A. K. Detwiler, M. D., Omaha.

The recently revived term, Catarrhal Fever, may, with advantage, be applied to that rather motley group of infections of the mucous membranes accompanied by fever—febriculæ—until now called, for want of a better name, Grippe. We are seeing, lately, a large number of cases characterized by a comparatively sudden onset with chilliness, slight rigors, or definite severe chill, malaise, headache, muscle pains and sore throat. These are accompanied by marked enlargement of the lymph nodes of the neck, especially at the angles of the jaw and posterior border to the sterno-mastoid muscle. In some cases, the swelling and inflammation is so severe that suppuration seems imminent; but so far, resolution has always taken place. The temperature range is from 100 to 105 degrees in the evening and lower in the morning; the pulse varies from 80 to 95 and this continues for three or four days, usually declining by lysis. The fauces are injected and the tonsils, if present, are red and inflamed. Cultures show staphylococci and diplococci, but no streptococci or diphtheria bacilli. The lungs are usually clear. A systolic bruit was heard in three patients; this disappeared during convalescence. There is slight abdominal tenderness; no roseola; no enlargement of the spleen; urinary findings negative.

The most striking features in these cases are the enlarged lymph nodes of the neck, the diurnal temperature variation and the slow pulse. This suggested the possibility of these cases being atypical typhoid fever. In every case (now twelve in number) the Widal reaction was found to be markedly positive. None of these patients had had typhoid fever, none had been immunized and the ages varied from two to thirty years.

Our cultures of typhoid bacilli were fresh and were tested out in other diseases and tonsilitis and did not agglutinate.

The question is, does Eberth's bacillus attack other lymphoid tissues than the intestines? Are these so-called cases of grippe or catarrhal fever really typhoid fever? Is it possible that the agglutination test of Widal is not specific?

We hope soon to make a further bacteriological report on the blood, lymph nodes and stools in these and other cases.

MEETING OF THE BOARD OF COUNCILORS, JANUARY 10, 1921.

The Board of Councilors of the Nebraska State Medical Association met at the University Club at 6:00 p. m., Jan. 10, 1921, and had as their guests President M. S. Moore, Secretary-Treasurer R. B. Adams, Librarian W. P. Wherry, the Committee on Journal and Publication—F. A. Long, B. F. Bailey, W. O. Bridges, and the Program Committee—Frank Conlin and Charles Kennedy. The following Councilors were present: Drs. Lehnhoff, Johnston, Bryson, Stewart, Potter, Fouts, Tornholm, Nielsen and Overgaard.

The new Council was organized by Dr. Morris Nielsen being elected chairman and Dr. Overgaard reelected secretary.

The Librarian presented his report as follows:

I hand you herewith my report as Librarian for the year 1920. During this time we have received 317 periodicals, very largely journals of the various State Medical Societies, and 35 books, most of which have been received from nonadvertising companies which pursuant to the ruling of our Journal Committee have not been reviewed.

We have at our command a splendid array of medical information, services of an expert librarian, and deplore the lack of interest on the part of the membership at large inasmuch as we have been called upon to supply but very few bibliographies. I would suggest that our appropriation be continued, as I would very much like to continue the propaganda relative to the Library.

Appended is a list of journals and books received.

Journals Received During 1920.

The Journal of the Americal Medical Association—Weekly.

The Journal of the Arkansas Medical Society—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

California State Journal of Medicine—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Nov., Dec.

Colorado Medicine—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Nov., Dec.

Journal of the Indiana State Medical Association—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

The Journal of the Iowa State Medical Society—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

The Journal of the Kansas Medical Society—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Kentucky Medical Journal—Apr., May, June, July, Sept., Oct., Nov.

The Journal of the Maine Medical Association—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov.

Bulletin of the Med. and Chir. Faculty of Md.—Dec., Jan., Feb., Mar., Apr., May.

Medical Herald—Jan., Feb., Mar., Apr., May, July, Aug., Oct., Nov., Dec.

Journal of the Michigan State Medical Society—June, July, Aug., Sept., Dec.

Minnesota Medicine—May, June, July, Aug., Sept., Oct., Nov., Dec.

Journal of the Missouri State Med. Assn.—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Journal of the Medical Society of New Jersey—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

New York State Journal of Medicine—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Northwest Medicine—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Ohio State Medical Journal—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Journal of the Oklahoma State Med. Assn.—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Journal of Organotherapy—Vol. V, No. 1.

Pennsylvania Medical Journal—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Rhode Island Medical Journal—Apr., May, June, July, Sept., Oct., Nov., Dec.

Journal of the So. Carolina Medical Association—Apr., May, June, Aug., Sept., Oct.

Southwestern Medicine—Jan., Feb., May, June, July, Aug., Oct., Nov., Dec.

Journal of the Tennessee State Medical Assn.—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov.

Texas State Journal of Medicine—Jan., Feb., Mar., Apr., May, June, Aug., Sept., Oct., Nov., Dec.

Virginia Medical Monthly—Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Volta Review—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Washington Medical Annals—Jan.

West Virginia Medical Journal—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct., Nov., Dec.

Wisconsin Medical Journal—Jan., Feb., Mar., Apr., May, June, July, Aug., Sept., Oct.

Journal of Dental Research—June, Sept.

Archives Rio Grandenses de Medicina—Jan.

La Escuela de Medicina—Aug., 1920.

Revista Medico Quirurgica—Sept.

Sanidady Beneficencia—Apr., July, Oct., Jan., 1920.

Department of Health, Pennsylvania Instruction Camp of 1919.

Peking Union Medical College Annual Announcement.

Pennsylvania Health Bulletin, May, 1920.

Report from the Department of Pathology and the Department of Clinical Psychiatry Central Indiana Hospital for Insane.

State of Connecticut—Report of the State Tuberculosis Commission.

The Weekly Review.

Books Received.

Arterio Sclerosis and Hyper-Tension—L. M. Warfield.

Food for the Sick and the Well—Margaret P. Thompson.

Hand Book of Diseases of the Rectum—L. J. Hirschman.

Hygiene: Dental and General—Clair Turner.

The Microbiology and Microanalysis of Foods—Albert Schneider.

Pathogenic Microorganisms—W. H. Park and A. W. Williams.

Personal Beauty and Racial Betterment—K. Dunlap.

Pharmaceutical Bacteriology—Albert Schneider.

Sex Attraction—V. C. Vaughn.

George Miller Sternberg—Martha L. Sternberg.

Syphilis—Henry Hazen.

Systematic Development of X-Ray Plates and Films—L. Wendell.

Transactions of the College of Physicians.

Bacteriology for Nurses—H. W. Carey.

Blood and Urine Chemistry—R. B. H. Gradwohl.

Diabetic Manual—Elliott Joslin.

Diagnosis of Disease—Hobart Hare.

Exophthalmic Goiter and its Nonsurgical Treatment—I. Bram.

Fundamentals of Human Anatomy.

Maternitas—C. E. Paddock.

Practical Dietetics—Alida F. Pattee.

Practical Massage and Corrective Exercises—Hartwig Nissen.

Refraction and Motility of the Eye—Ellice M. Alger.

Short Talks on Personal and Community Health—Louis Lehrfeld.

Respectfully,
W. P. Wherry, Librarian.

Motion made and seconded that it be adopted and spread on the records. Carried.

Report of Secretary-Treasurer read:

The year 1920 just closed, was a very successful year for the Nebraska State Medical Association. The membership Dec. 31, 1919, was 1120, and Dec. 31, 1920, was 1168, which is the largest membership in the history of the Association. Being new to the office of Secretary-Treasurer, I am unable to make a report more detailed than to say that the work for 1920 was done by Dr. Aikin in as near an ideal manner as is possible to do. All records and accounts are in excellent condition.

The Auditor employed to go over the books for 1920 has made his report and I submit this to you for consideration.

Respectfully,
R. B. Adams, Secretary-Treasurer.

Motion was made and seconded that it be adopted and spread on the records. Carried.

The report of the Committee on Public Policy and Legislation was read, accepted and ordered placed on file.

Report of the Medico-Legal Defense Committee read:

For the year ending December 31st, 1920, your Committee on Medico-Legal Defense submits the following report of its work:

Seven new cases have come to our attention during the period covered by this report. One of these cases we could not enter into for the reason that the defendant doctor was not a member of the Association at the time the cause of action arose. We have, however, advised with the attorneys for the doctor and rendered what assistance we could without expense to the Association. In the second of these new cases we entered with some little uncertainty as to our legal right, but sure of our ground morally. The facts in this case involved an abortion. Of the remaining five, none have yet been reached for trial. We secured the dismissal of one case without trial.

One case which we entered, also a new one, but not reported in the above for the reason that it was not, strictly speaking, a mal-practice case, was the action of the State vs. Warhoochee Ayerno, an Indian-Hindu medicine woman, practicing without a license, the result being that she was convicted and fined.

We began this year with ten pending cases, some now ready for trial, and hope to have the most of them won before our next report.

During this year, as above indicated, our attention has been called to an abortion case, and one for practicing without a license, both of which we thought we should enter. We believe the fee splitting law is also being violated. Therefore, it is suggested to the Association that our powers be so enlarged that we may be authorized to go into these cases, and those of a similar nature, believing that with this additional power we can be an element in raising the standard of the profession.

Respectfully submitted,
J. S. Welsh, Associate.
R. B. Adams, Secretary.
A. S. von Mansfelde, Chairman.

Motion made, seconded and carried that it be adopted and spread on the records.

Dr. Johnston moved that it be the sense of the Board of Councilors that Dr. Bailey confer with the Welfare Board in regard to bringing pressure to bear on the prosecution of illegal practitioners and fee-splitters. Motion seconded by Dr. Tornholm and carried.

Report of the Auditor read:

GENERAL FUND.

Receipts and Disbursements.

January 1 to November 30, 1920.

Balance December 31, 1919	$1,443.30
RECEIPTS	
From Geo. Covey for Abstract Work	$ 3.00
From Hotel Fontenelle for Advertising	25.00
From Dues	4,680.00
Total Receipts	$4,708.00
	$6,151.30
DISBURSEMENTS	
To Journal Fund	$1,887.50
To Defense Fund	1,165.00
Salaries	291.66
Rent	222.75
Telephone	91.30
Printing	81.85
Legislative Committee	86.00
Reporting Convention	125.00
Committees' Expense	98.24
Audit	34.50
Exchange	1.26
Stationery, Postage and Miscellaneous	204.30
Total Disbursements	$4,289.36
Balance in Bank as per Statement Nov 30, 1920	1,861.94
	$6,151.30

DEFENSE FUND

Receipts and Disbursements.

January 1 to November 30, 1920.

Balance December 31, 1919	$2,233.66
RECEIPTS	
From General Fund	$1,165.00
	$3,398.66
DISBURSEMENTS	
A. S. von Mansfelde, salary and expense	$ 300.00
Attorney's fees, Behrens vs. Morrow case	177.00
Total Disbursements	$ 477.00
Balance in Bank as per Statement Nov. 30, 1920	2,921.66
	$3,398.66

JOURNAL FUND

Receipts and Disbursements.

Year ended December 31, 1920.

Balance January 1, 1920	$1,034.85
RECEIPTS	
From Members	$1,895.00
From Dividends	137.71
From advertisements	3,714.36
Total Receipts	$5,747.07
	$6,781.92
DISBURSEMENTS	
Salaries	$1,600.00
Committee Meeting and Dinner	19.65
Press Clipings	42.00
American Medical Association Journal	5.00
Publication Expense	3,647.92
Total Disbursements	$5,314.57
Balance December 31, 1920	1,467.35
	$6,781.92

Motion made by Dr. Potter, seconded by Dr. Johnston that the bill of Dr. von Mansfelde for an additional audit of the books be referred to the House of Delegates with the recommendation that it be paid.

Motion made by Dr. Johnston and seconded by Dr. Fouts that the November and December salary of Dr. Aikin be paid to Mrs. Aikin. Motion carried.

Motion made by Dr. Lehnhoff that an additional appropriation of $190.95 be made from the general fund to cover the expense of the secretary's office for 1920. Motion seconded by Dr. Fouts and carried.

A letter from Dr. Douglas was read and placed on file.

Motion made by Dr. Lehnhoff and seconded by Dr. Tornholm that the Journal Committee is hereby given authority to invest their excess funds as they see fit. Carried.

Motion made by Dr. Johnston and seconded by Dr. Stewart that the President, Secretary-Treasurer and the Secretary of the Board of Councilors be appointed as a Board to invest the funds of the Association.

Summary of Councilor's Report—Year 1920.

District	Members	Deaths	Expense
1.	293	4	
2.	134		$8.50
3.	86	2	9.50
4.	32	2	.50
5.	103	0	9.10
6.	86	2	6.85
7.	77	3	12.00
8.	31	0	
9.	97	0	23.34
10.	123	2	25.00
11.	None Received		
12.	28	0	54.30

There being no further business the meeting adjourned.

A. P. Overgaard,
Secretary, Board of Councilors.

American College of Surgeons Meeting.

The American College of Surgeons will hold clinical and scientific meetings in Omaha, March 3-4, 1921. Clinics will be held at the several hospitals by Omaha members of the American College of Surgeons in the mornings, and in the afternoons there will be scientific meetings. On the evening of March 3rd there will be a meeting to which the public will be invited. The topic of discussion will be "The Cancer Problem."

This is an innovation instituted by the American College of Surgeons in many of the states of the Union. It is expected that it will be a permanent affair and will grow in size and usefulness as time goes on.

GENERAL NOTES

The Medical School of Washington University is soon to publish and distribute an announcement of short courses for practitioners of medicine, varying in duration from six to sixteen weeks. These courses will be offered in medicine, surgery, obstetrics, neurology, urology, orthopedic surgery, pediatrics, surgical pathology, roentgenology, opthalmology, otology, rhinology and laryngology. The primary object of these courses, which will begin about April 4, 1921, is to furnish practitioners in Missouri and neighboring states with the opportunity of renewing contact with a large amount of well correlated clinical material.

The Noguchi yellow fever vaccine is being used with the approval of the health authorities of the Latin American countries. People who have been vaccinated with the Noguchi vaccine are permitted to travel in these countries without quarantine detension. Persons going from this country may be immunized in New York before sailing.

A disastrous fire occurred last month at the Nurses' Home of the University of Nebraska College of Medicine gutting the building. Most of the nurses lost all their belongings, and a number were severely injured in escaping from the building.

The first annual meeting of the Nebraska Section of the American College of Surgeons convenes in Omaha on March 3rd and 4th.

This session will include, clinics and clinical demonstrations on the morning of the two days of the meeting, scientific sessions where papers relating to the science of art in surgery will be read and discussed, and a mass meeting for the laity at which distinguished orators will present brief addresses in non-technical language on vital topics of public health and preventive medicine.

This meeting on the evening of March 3rd is open to the profession and laity, and will be addressed by Dr. Franklin Martin of Chicago, and other prominent surgeons of the east. The subject of cancer will be discussed from the standpoint of prevention.

SOCIETY NOTES.

The Lancaster County Medical Society entertained at dinner, Thursday evening, December 9, 1920 in honor of Dr. R. B. Adams the newly appointed Secretary of the Nebraska State Medical Association; and also to formally pay the respects of the Society to the memory of the late Dr. J. M. Aikin.

Invitations were issued to all officers of the State Medical Association a large number of whom were present.

In the absence of Dr. A. R. Mitchell, from the city, who is the senior member of the Society in years of practice, Dr. W. L. Dayton who is the second senior member presided.

Dr. B. F. Bailey spoke of Pertinent Problems.
Dr. J. M. Mayhew: Yesterdays—Their lessons.
Dr. W. O. Bridges: Medical Economies.
Dr. A. I. McKinnon: Facts and Fallacies.
Dr. H. H. Everett: The Medical Pendulum.
Dr. Adolph Sachs, Dr. H. E. Potter and Dr. Morris Neilson responded for the association.

Dr. Adams was then called upon and paid tribute to the excellent condition in which Dr. Aikin had cared for the affairs of the State Association. Dr. B. F. Bailey who has been in very close touch with the late Dr. Aikin for many years spoke of Dr. Aikin as a man, as a physician and as a friend.

The Mid-Winter meeting of the Elkhorn Valley Medical Society was held at the Pathfinder Hotel in Fremont on Thursday, Jan. 13, 1921. Fifty physicians from throughout the State attended, and a good and interesting program was presented. Election of officers resulted in the following: G. E. Charlton, Norfolk, President; F. H. Nye, Plainview and C. T. Ingham, Wayne, Vice-presidents; and Andrew Harvey, Fremont, Secretary. The summer meeting will be held at Norfolk.

The regular meeting of the Dodge County Medical Society was held in Fremont Dec. 30, 1920. Papers were read as follows: Present Status of Vaccines by P. R. Howard, North Bend and Epidemic Encephalitis by F. E. Coulter, Omaha. The following officers were elected for 1921: President, Andrew Harvey, Fremont; Vice-president, W. Howard Heine, Hooper and Secretary-Treasurer, Grant S. Reeder, Fremont. Sixteen members of the Society were present.

The Adams County Medical Society had their first regular meeting in the Chamber of Commerce rooms Wednesday evening, Jan. 12th, with a large attendance. An interesting program was given, Dr. H. J. Pittock reading a paper on Luminol in Epilepsy, and Dr. L. K. Strate on Laceration of Cervix. The president of the Society, Dr. O. H. Hahn, and other officers of the Society promise that every meeting will be interesting as well as instructive and entertaining. Meetings will be held the second Wednesday evening of every month.

The Pawnee County Medical Society at a meeting held in the Pawnee City Hospital, elected Dr. L. D. Harman, Table Rock, President; Dr. Paul J. Flory, Pawnee City, Secretary-Treasurer, and Dr. W. R. Boyer, Pawnee City Delegate.

An interesting meeting of the Johnson County Medical Society was held at Tecumseh Dec. 15th., Dr. H. J. Lehnhoff, Lincoln, talked on lobular pneumonia and Dr. W. O. Colburn, Lincoln, on lobar pneumonia in children.

The Saline County Medical Society held its annual meeting at the Crete Public Library Dec. 21st., Dr. F. J. Stejskal, Crete was elected President; Secrettary-Treasurer, H. W. Quirk, Crete; Delegate P. W. Dodson, Wilber.

At the annual election meeting of the Lancaster County Medical Society, Dr. B. F. Bailey was elected President, Dr. D. D. Sanderson Secretary, Dr. G. H. Walker Treasurer, Dr. F. F. Teal and Dr. J. J. Hompes delegates to the State convention.

Dr. and Mrs. E. I. Whitehead of Holdrege entertained the members of the Phelps County Medical Society and their wives at a six o'clock dinner Dec. 29th, 1920. The members then held their annual meeting and elected the following officers for the ensuing year: Dr. K. P. Palmer, President; Dr. R. W. Long, Vice-President; Dr. P. A. Sundbury, Secretary-Treasurer, and Dr. E. I. Whitehead, Censor.

The Kearney County Medical Society held its annual business session at Axtell, January 13th, with a seventy-five per cent attendance of all eligible physicians in the county. The following officers were elected for 1921: President, Dr. W. H. Powell of Minden; Vice-President, Dr. A. L. Marsteller of Wilcox; Secretary-Treasurer, Dr. F. A. Wells of Axtell. The next meeting will be held April 7th.

ABOUT THE DOCTOR

Dr. A. J. Rodgers has located at Lisco, Garden county.

Dr. R. W. Place of Council Bluffs has located at Bristow.

Dr. Claude Wills, and mother, Madison, are spending the winter in Florida.

Dr. J. Lue Sutherland and wife of Grand Island, are spending the winter in and about Los Angeles.

Dr. J. F. Edwards, health officer, Omaha, has asked for $15,000 to fit out a new detention hospital.

The sympathy of the Journal is extended to Dr. Warren Thompson of Omaha who lost his wife on Jan. 10th.

Dr. E. O. Wilson, Madison, who has been engaged in farming and stockraising has moved to town and will resume practice.

Dr. D. D. Raber of Tilden, who has been seriously ill, is now recovering nicely. He is at the home of his father in Omaha.

In the District Court of Brown county, "Dr. Carpenter" Napropath was fined $200 for practicing medicine without a license.

Dr. Charles Mullin of Broken Bow, had to submit to a second operation in the early part of January, from which he has recovered nicely.

Dr. A. D. Nesbit, Tekamah, was tendered a surprise Dec. 8th, in commemoration of the thirty-third anniversary of his location in Tekamah.

Dr. John G. Bowman, for several years Director of the American College of Surgeons, has been elected Chancellor of the University of Pittsburg.

Dr. and Mrs. Frederick O. Beck of Omaha have left for the Pacific Coast, to sail for Honolulu, where they will remain until the middle of February.

Dr. R. H. Foster, formerly of Norfolk, has engaged in practice in Tilden. He succeeds Dr. D. D. Raber who has retired from practice owing to ill health.

Dr. and Mrs. O. L. Wilson, Rushville, ate Christmas dinner with their son, Dr. James Wilson, South Bend Ind., and spent a pleasant month visiting Hoosierdom.

The residence of Dr. W. H. Mick, Omaha, was robbed one of the first days of January of about three thousand dollars worth of valuables, jewelry and army service medals.

The hospital board of the Methodist Church has decided upon Scottsbluff as the location of one of the Methodist hospitals to be erected in Nebraska.

Scottsbluff has subscribed her apportionment, $50,000 toward the $150,000 which the hospital is to cost.

It is reported that Dr. Charles E. Sawyer of Marion, Ohio is to be the White House physician under the forthcoming administration. Dr. Sawyer is 60 years of age, a graduate of the Cleveland Medical University and is a fellow of the American College of Surgeons and is the owner of Sawyer Sanatarium.

MARRIED

Dr. Frank S. Bonnell and Miss Jessie G. Bergman, Kimball were married Wednesday, December 29th.

DEATHS

Dr. J. J. Solomon of Omaha, aged 75 years, died on Jan. 10th. He was a resident of Omaha for 30 years.

Dr. Frank P. Boyd, age forty one, sometime a practitioner at Scottsbluff, died at San Josa, Calif., Dec. 6th.

Dr. N. F. Steiner, Omaha, Creighton Medical 1900, assistant professor of medicine in his alma mater, died in an Omaha hospital, Dec. 31st., age 49, from cancer of the stomach.

Dr. H. C. Gibson, Chadron, Central Medical College St. Joseph, Mo., 1900, died New Year's Day of heart disease, aged about 53 years.

Dr. Charles E. Hershman, Alliance, died suddenly in his office Dec., 20th, while administering X-ray treatment to a patient. Death is supposed to have been caused by contact with live wires, the victim having had organic heart disease. Dr. Hershman was forty years of age, a graduate of Rush Medical College, 1908, had been in practice at Alliance for 9 years.

Abstract Taken From "American Medicine" — The Fact of the Case.

E. S. Goodhue, M. D., LL. D.,
Pukoo, Molokai, Hawaii.

The first steps toward enlightened methods in surgery and medicine have all been taken by the regular school; the discovery and differentiation of contagious and infectious diseases—small-pox, typhus, typhoid, malarial, yellow and other fevers, cholera, plague, diphtheria, phthisis, leprosy, with many other diseases—and their cures, in so far as science has gone. Havana, Panama and similar pest-holes have been made habitable.

Now, all one-sided schools of medicine are offshoots from the regular profession. They originated in the original parent organization, but have become parasites upon it, abnormal growths which serve no effective purpose and may become malignant. They are like a political party organized upon one issue—prohibition, woman suffrage, wildcat currency, or what not—always in the end abortive. They have eliminated perspective.

All the reasonable aids tested by the most exacting experiments are incorporated by the regular school, and not singled out by loud advertisement as the sole basis of its therapeutic advancement.

To sum up a total of cures under any system is no evidence that the system has cured a single patient of his disease. Only the scientific method can determine whether the particular individual was cured, and what; if he was curable; if he was even sick.

Certain persons tell us that if any or all of these schools do accomplish cures, they should be licensed to practice at large, ignoring absolutely the fact above indicated, and also the fact well established by unbiased tabulation, that many persons have been sacrificed to death by uncertain and unscientific methods of treatment. This alone is reason enough why no such schools should be allowed to experiment upon weakness and credulity.

We might just as well license Kahunaism in Hawaii as to license any of the new, one-idea systems, because individuals by the score claim to have been cured by Kahunaism.

Of the two systems, Kahunaism appeals to me as being the more sensible and scientific. Yet we license chiropractics and not Kahunaism.

That is what we have an intelligent legislature for, and that is what we have a sane and responsible governor for—to veto bad bills which have gotten through. Otherwise the public is at the mercy of medical Bolshevism.

Idealities and long drawn-out theories about life and action are very well so long as they remain abstractions.

But the world is a fact.

Peter could not walk on the water, and with a faith greater than his, no Christian Scientist has been able to do what Peter tried but failed in doing. The trouble lay not in Peter, his faith, or want of faith, but in the universal fact.

The affinitist and idealist loves no less than our medical theologians who deny the existence of matter, have failed to reckon with fact.

Love is a matter of mechanics, too. The woman you love cannot be ethereal, filmy, intangible except in your dreams. The woman you marry may be Christian Scientist in mind, in body she must have breasts to fill with milk for her child and yours.

Oh, this talk about the nothingness of everything is the saddest sort of camouflage.

We must consider the Christian Scientist's conception of morality, under the belief that bodies, organs, functions, no matter where or when, are products of mortal mind, and really non-existent.

Wives, in Christian Science, bear children with the average amount of pain and danger.

You are ill. Christian Science steps in to deny that you can be ill, but will cure you of your sickness. Why a cure if there be no sickness? Oh, it's only a mental ill. A kink in your brain. A morbid thought. The treatment and the fee will be for that.

The Christian Scientist's husband answered, "Me, doctor, John Brown. We're, that is, I, my wife, I mean, is expecting, in fact, the baby's comin'. I come to git you. The pains is mighty bad an' no signs of a-bornin'."

"Well, my man," said the doctor very firmly, tho I am sure a smile fell into his voice, "your wife ain't sick. Doesn't she know better than anyone else? She isn't even married. Those clock-like pains which come with such strength are the timed temptations of the devil, delusions of a morbid mind. My son, go home and tell your wife that I'm not a doctor. That she ain't a woman. Tell her, sir, that this is a pleasant night in June. Good night."

—L. O. H.

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CONTENTS

Page

Intra-Abdominal Injuries Due to External Violence, A. F. Jonas, M. D., F. A. C. S., Omaha, Neb. 65
A Clinical Classification of Hyperthyroidism—Exophthalmic Goiter, Czar C. Johnson, M. D., Lincoln 70
The Epidemiology of Communicable Diseases, Henry Farrell, M. D., Kearney.... 72
Clinical Diagnosis of Tumors of the Breast, Max Emmert, M. D., Omaha 75
The Treatment of Injuries of the Spine, H. Winnett Orr, M. D., F. A. C. S., Lincoln 77
Syphilis As Seen at the Night Venereal Clinic, University of Nebraska Dispensary, C. R. Kennedy, M. D., Director of the Night Clinic 80
A Reorganized State Medical Society, C. A. Roeder, M. D., F. A. C. S., Omaha........ 83
The Anatomic and Dynamic Principles Involved in Prolapsus Uteri, O. D. Johnson, M. D., Kearney 86
New and Nonofficial Remedies........ 89
Editorial 90
Report of a Case of Jejunal Ulcer and Abscess, B. R. McGrath, M. D., Grand Island 93
Nebraska Section—Clinical Congress of American College of Surgeons........ 94
Western Electrotherapeutic Association.... 95
General Notes 95
Society Notes 95
About the Doctors........ 96
Deaths 96
The Hospital As a Memorial........ 96

Intra-Abdominal Injuries Due to External Violence.

A. F. Jonas, M. D., F. A. C. S., Omaha, Neb.

From Clinics University Hospital, Medical Department, State University, Omaha, Neb.

The World's War has stimulated a new interest in that unlimited field of surgical lesions, known as traumatic surgery, not only to those who had the rare fortune of being brought in personal contact with the multitudinous injuries incident to active military combat, but to the surgeon whose activities are confined to the traumatisms met in civil practice. The military surgeons, near the lines of advance, in the mobile field and evacuation stations, often had their cases presented in such rapid succession that careful deliberation was next to impossible consequently exact diagnosis was not expected. Speaking particularly of abdominal lesions, most surgeons hesitated in the early part of the war as to the best mode of procedure in any given form of abdominal injury. The tendency was toward non-interference. The resulting fatalities were so great that the practice of early operation as near to the front as possible, became the rule. The experience in civil practice of early operation has long ago been found to be the safest rule. Consequently it was found evacuation of the severely injured to the base hospital with its unavoidable delays, sometimes several days, was so constantly fatal, that the plan of action was changed. All cases with intra-abdominal lesions were then operated upon at the evacuation and often in the mobile hospitals. These cases were kept, when possible, as near the locality where the injury was received as practicable, for to move them immediately after surgical repair, was fraught with danger. To determine which of the injured required immediate intra-abdominal treatment, demanded rare judgment. The best judges proved to be those men who, in civil life had had an extensive experience in the management of the "acute abdomen." Those who had seen many acutely developing lesions such as perforated viscera in the form of appendiceal lesions, perforated duodenal ulcers and ruptured tubal pregnancies. All of these conditions present a train of definite and typical objective signs that point unerringly to the gravity of the situation. The surgically trained mind had learned the unerring landmarks that point to disaster. This same mind, that actuates the surgeon to prompt action, turns the tide from impending danger to safety. The principles learned in civil life proved to be the only guide in military practice. Surgery in war and in peace, rests on the same foundations. The surgeon who tried to forget the fundamentals acquired in general practice soon awoke to his errors. The details of procedure, of course, were not the same at the front for there was no time for deliberate procedure. Rapidity of thought and action was imperative. Long hours of labor, mental and physical fatigue, were a part of the game. To operate or not to operate in an abdominal injury was not always an easy problem, particularly when unavoidable fatigue, due to long hours of activity, had dimmed the judgment of the surgeon.

The war is over and those of us whose daily duties bring us in contact with injuries to the abdomen and its viscera, seldom have more than one such case at a time to deal with. We can deliberate and concentrate our minds on the lesion in hand and it is to be expected that we will proceed with all the aids of consultation and laboratory accessories.

The usual reports on military surgery detailing injury to the abdomen and its contents deal with penetrating wounds, the indications usually point to immediate operation. It is true that not by all means do all wounds of the abdominal wall enter the abdominal cavity. Gunshot wounds are sometimes confined to the abdominal parietes. A bullet may traverse the abdominal walls from side to side or in an oblique or an antero-posterior direction along the lateral walls without having penetrated the peritoneum, consequently the problem is not always simple.

It has been the writer's privilege to have observed a considerable number of such lesions, therefore, the question that will engage our attention briefly today relates to non-penetrating abdominal traumatisms, injuries due to blows by various objects, such as (a) heavy objects falling on or striking the abdomen, (b) the falling of the individual from a height upon a beam or hard floor, (c) kicks by man or beast, (d) blows with a club or a wagon tongue inflicting a serious lesion on some part of the abdominal contents.

In many cases, it is difficult to estimate the gravity of an injury when the abdomen has been struck by a blunt object. A large proportion of such traumatisms are confined to the abdominal walls, being nothing more or less than a contusion of the subcutaneous structure or the musculature. There may be more or less ecchymosis and, when present, the force of the blow may have expended itself on the abdominal parietes. In addition to the evidence of hemorrhagic extravasation, there is more or less local tenderness but no marked generalized abdominal pain or rigidity. There are no disturbances of the cerebral centers or of the circulatory system. In many instances, there is an absence of all signs of local and general manifestations save for a moderate tenderness which soon disappears leaving no traces. About four-fifths of the abdominal injuries may be classed in this group and may be considered as abdominal contusions without injury to the abdominal contents.

The second group comprises that class in which in addition to more or less severe contusion of the abdominal wall, there exists a solution of continuity of the abdominal contents such as contusion or laceration of the hollow viscera and the glandular organs and their vascular supply. It is important to determine whether we have to deal with an extrinsic or an intrinsic lesion. The fate of the subject depends on the correct determination of this point. I need hardly state, at this time, that an extravasation of stomach and intestinal contents or a hemorrhage usually ends fatally unless prompt and early intervention is resorted to.

The determination of the existence of an intra abdominal traumatism may be illustrated by the following case.

A. F., aged 40. Farmer. Was brought to my service at the Methodist Episcopal hospital with a history that about 24 hours previously he had been kicked on his abdomen by an unshod horse, and thrown down backwards. He complained of a moderate amount of abdominal pain although he had been given morphia hypodermatically to give him comfort while being brought some distance by railway. On inspection his abdomen was flat but intensely rigid. There was a board like hardness more on the right than on the left side. There had been no bowel movement or emesis. His pulse and respiration were only moderately accelerated, temperature normal. On inquiry, he was unable to give the exact point of the blow except that it was not below the umbilicus. The accident had occurred some hours after the ingestion of the last meal, but there was a marked epigastric distention. Observation has taught us that abdominal rigidity associated with so-called "acute abdomen" or an injury to its walls, is of prime diagnostic importance. It is safe to say that the amount of pathology is in direct proportion to the rigidity of the abdominal musculature. In our case we were guided by this one physical sign and advised immediate operation, which was done. An incision through the right rectus disclosed the abdomen to be filled with a dark colored, almost black, blood which gushed forth in large quantities. The stomach presented itself and was greatly distended but not perforated. A careful search did not reveal a laceration of the intestinal canal. The bleeding apparently originated in the left lobe of the liver. There was no evidence of fresh hemorrhage. It was decided to establish drainage which was done by passing a large drainage tube through the left flank draining the left upper abdomen and another tube was passed into the cul-de-sac through a suprapubic incision. The patient was sent to bed. The progress, for a period of three weeks, was uneventful. He had been sitting up several days and had partaken of a normal diet, when he began to vomit with increasing severity for several days. A roentgenogram revealed apparently a pyloric obstruction. An immediate operation failed to establish a pyloric obstruction although the stomach was nearly full of barium. The duodenum and the jejunum for a distance of about ten inches were distended and contained barium, it was then discovered that a loop of jejunum was adherent to the inner side of the mesenterium of the splenic flexure of the colon. This adhesion was not firm and was easily separated and the angulation and consequent obstruction relieved. No evidence of hemorrhage. Abdomen closed. For twelve hours normal condition. Then sudden death. Autopsy revealed an undiscovered mesenteric injury from which a secondary hemorrhage, after three weeks, had occurred.

The preceding case illustrates in a most marked manner the importance of abdominal rigidity as a diagnostic factor in intra-abdominal lesions. We must not lose sight of the fact that it is an early sign and may entirely disappear in twenty-four to forty-eight hours as is shown by the following case.

D. T., age 40. Section laborer. While riding on a handcar fell from the front edge of it onto the track, the car passing over him and, in doing so, the gear struck his abdomen, the exact point of impact could not be given. The man was taken to his home, no medical aid was summoned until the end of the second day and then because of developing abdominal pain and distention. As an excuse for not calling medical aid earlier, he stated that he did not feel so bad. He noticed a "hardness of his stomach", but it was flat. He was of the opinion that he was not seriously hurt. He had vomited some mucus but not a large amount. He had made successful efforts to produce a bowel movement. The medical attendant found, aside from a great distention, a rapid pulse, an elevated temperature, more or less vomiting but no abdominal rigidity. He regarded the condition as very grave, and advised an immediate operation to which the patient agreed.

On opening the abdomen, there appeared a great deal of free fetid fluid feces. A generalized peritonitis was in progress. Lifting the omentum, a four-inch laceration in the long axis of the transverse colon, came into view. It was discharging its contents into the abdomen. There being no time for intestinal repair, nor was the colon in a condition to warrant resection or even suture, a large drainage tube was placed into its lumen and the intestinal wall sewed over it and the end of the tube brought out through the abdominal wound. The case progressed to a fatal termination owing to the generalized peritonitis and the profound toxemia.

Here we are informed by the injured man that his stomach was very hard for the first two days. He did have some pain and some nausea and vomiting but he did not think his condition serious. The important feature was the early abdominal rigidity.

Pain, however, is early and more or less constant but it is often mild or may be absent. The pain may be acute, lancinating, colicky, continuous or intermittent and in severe traumatism, becomes continuously worse. In comparatively slight injuries, it may disappear in a day or two. If the pain suddenly grows worse, a perforation has, in all probability, taken place. Tenderness, which is usually present, is an important guide in locating the seat of injury. Occasionally the tenderness covers such a broad area that the exact or even approximate point of the lesion cannot be located. We may be safe in concluding that early rigidity, flat and tense abdomen, pain and tenderness following a blow upon the abdomen are usually determining diagnostic factors.

Associated with these, there are numerous other signs that are inconstant. Unconsciousness is absent in the majority of cases. Restlessness, while sometimes present, is often absent. Early vomiting is frequent; it may be a late symptom and when fecal, is always grave. Nausea is practically constant. While tympanites is early in some cases, it is nearly always a late but a constant sign. However some fatal cases have been reported where no tympanites developed. Temperature is extremely variable and is of little diagnostic value unless when subnormal or extremely high. The range of temperature is usually not great. There is great variation in the pulse rate. It often gives warning of hemorrhage and peritonitis. A gradually falling temperature with a slowly increasing pulse rate, decreasing volume and a lessening blood pressure, means hemorrhage. On the contrary a gradually rising temperature, increased pulse rate, the hard and wiry pulse, indicates peritonitis.

The element of shock, immediate or deferred must always be kept in mind. Our diagnostic resources may sometimes be taxed to the utmost. If shock was present, which was not often observed in our cases, it was immediate. In one or two instances, it was difficult to differentiate between shock and hemorrhage. Early blood pressure measurements aided us only to a limited degree because a low blood pressure may exist in both shock and hemorrhage.

Sometimes it was a puzzle as to whether there was only shock or whether there was not a coexisting hemorrhage; whether the primary shock symptoms did not so overlap manifestations of exhaustion from hemorrhage in such a manner as to make it difficult to point out where shock ended and the exhaustion from hemorrhage began. Here the judgment of the surgeon sustains its severest test. Right or wrong may determine life or death. In our experience shock was seldom so profound that it did not disappear in the course of an hour or two with the usual aids of artificial heat, lowering of the head and elevation of the trunk and lower extremities and colonic instillations of hot saline solutions. The use of medicaments by mouth or hypodermatically, especially alcoholics were of doubtful value. The use of hot drinks appeared to be effective in several instances. Alcoholics by stomach were useless for they had often been given by well meaning friends before the arrival of the medical attendant. We must not lose sight of the presence or absence of bowel movements. Persistent constipation may be due to contusion of the intestinal walls and mesenterium. Bloody stools mean bowel injuries in the form of lacerations. Urinary retention may be due to laceration of the urinary bladder. Bloody urine whether passed voluntarily or by catheter, always means injury to the bladder or kidney.

The average duration of life in fatal injuries, has been shown in a series of collected cases to be 48 hours. In some instances shock was unrelieved, a state of complete collapse soon ensued ending in death. In cases of hemorrhage and fecal extravasation, collapse and death followed in a few hours. Peritonitis, the most dreaded of all complications, has shown a prognosis almost as bad.

The most disappointing of all are those instances, where the symptoms are vague, the suffering is slight, there is apparent improvement but with little warning the slight tenderness rapidly develops into an alarming peritonitis and our hopeful attitude becomes one of alarm. A blow exerting its force upon the abdominal viscera not infrequently produces a paralytic ileus, where there is a complete absence of peristalsis, even in the presence of more or less extensive intestinal perforation and laceration, that may remain unchanged for 48 hours. Several such cases have come to the writer's service, in particular two instances of perforating gunshot wounds. In both subjects there were no alarming symptoms, the medical attendants were content to await developments, which appeared in due time in the form of intense abdominal pain, great distention, rapid pulse, great restlessness, a most hopeless condition when brought for operation. The operation revealed multiple intestinal perforations with extensive fecal extravasation. The cases ended fatally. This condition of ileus may exist in all forms of abdominal traumatism with and without laceration of the solid and hollow organs.

Fortunately the rank and file of the general practitioner has been awakened to the fact that all abdominal traumatisms demand a most critical and immediate investigation. A decision as to the mode of procedure must be made without delay. Early surgical interference has shown good results, procrastination has been fatal.

Considering the foregoing, we must take into account the nature of the blow, its force, how inflicted and the form and size of the striking object. When the object is small and hard and applied with great force and if inflicted at a point where a gut lies between the point of injury and a bony prominence like the vertebral column or iliac bone, a ruptured intestine or organ may be looked for. If the site of the blow is over the liver, spleen or bladder or full stomach or kidney, our attention must be directed to these organs. Taking into consideration the locality of the blow with existent abdominal rigidity and localized tenderness, regardless of other symptoms, indications for operative interference are imperative.

Clinical experience has taught us that four-fifths of the cases of contusion of the abdomen recover, the injury was comparatively slight, the blow lacked force, it was not struck over a bony prominence or a full stomach or a glandular organ but on a part of the abdomen where the intestines, on account of their great mobility, slid to one side. Every case deserves the closest attention for 24-48 hours.

We never can know which is the fifth case, therefore, the necessity for the closest scrutiny.

Confronted with an intra-abdominal lesion, we can only speculate as to the exact nature of the injury. One must be prepared to encounter a laceration of the mesenterium, stomach, intestine, or a glandular organ.

Curtiss, in a series of experiments on the cadaver, has thrown some light on the relative frequency and nature of the lesions and has drawn the following conclusions, they closely correspond with clinical experience.

1. In contusion of the abdomen, the intestine is ruptured by being crushed between the contusing body and a prominence of the vertebrae or pelvis. The injury is, therefore, not a true rupture, but a contused and lacerated wound of the gut.

2. Partial distention of the gut especially if a large part of the intestine is distended diminishes the danger of rupture.

3. If great distention of the stomach, as after a full meal, or greatly inflated isolated loop existed in life, the danger of rupture is great, even if these organs did not lie directly over a bony prominence.

4. The real danger points are to organs when in contact with vertebral bodies, near the brim of the pelvis especially (when hernia is present) and near the crest of the ilium.

5. There are many chances in favor of escape of the intestines from injury. There may be no gut lying directly at the point where the blow is inflicted; the gut may be only partly inflated with gas; or it may slip away from the pressure exerted by the blow. This fact is of great importance in its bearing on the question of early operation for rupture of the intestine.

Usually, we may expect to find the lesion immediately under the site of the blow. There are exceptions, however. There may be instances where the violence may be transmitted to the opposite side of the abdomen as the writer has found several times. The patient cannot always designate the exact point. The clothing often prevents external marks.

While shock is present in the majority of cases, it is a factor that must often be reckoned with. In itself, it is usually not grave, and soon disappears. However, in isolated instances, it has ended in death.

If the physical signs point to an intra abdominal lesion, the method of procedure is clear. Assuming that no shock exists, we proceed to open the abdomen by a long incision in the median line unless a local injury exists as may sometimes be determined by the locality of the blow. A long incision will sometimes enable us, by retracting and lifting up the sides of the incision, to locate by inspection, the locality and even the nature of the injury as we were able to do in more than one case. It is clear that a minimum amount of manipulation will not only lessen the scattering of extravasated intestinal contents in case of laceration, but avoids traumatizing the structures still more. If the stomach or intestine has been lacerated, repair it. If contused so as to threaten its future integrity, resect it. If the mesenterium has been torn, sew up the rent. If a bleeding vessel is found, ligate it. If a solid organ is injured, treat as indications demand. Should there have been severe hemorrhage, an intravenous blood transfusion either before or immediately following an operation is often a life saving measure. If for any reason a blood transfusion is impractical, an intravenous or hypodermic saline infusion can be used with good effect.

The writer is free to confess that with an increasing experience with acute intra abdominal lesions resulting from injury, he is no nearer to determining the exact nature of the lesion prior to opening the abdominal cavity than he was twenty years ago. It is true he has learned more fully to appreciate the danger signals and is fully aware of their gravity, but he is not able to differentiate between contusions and lacerations of the hollow and solid viscera nor can he estimate the extent of the damages. But he has learned that when in doubt an open exploration is the safer plan. With our modern technique we are warranted in operation on suspicion.

A Clinical Classification of Hyperthyroidism—Exophthalmic Goiter.*

Czar C. Johnson, M. D., Lincoln.

Patients presenting themselves with hyperthyroidism are problems which confront every physician and surgeon. If the symptoms and pathology were the same in all, if age, internal glandular disturbances and accompanying or consequential lesions in other organs were not factors the solution would not be so difficult.

The pathology varies. In some, papillary proliferation and round cell infiltration predominates. In others cell changes in type due to exhaustion from over stimulation or proliferation of parenchymatous cells with or without increased connective tissue and activation of fetal rest cells or combinations of these phases may be present. Distribution may be in isolated areas, in one lobe or the whole gland. There may be hyposecretion of iodine as compared with the normal, hypersecretion of the normal or definitely toxic material.

Seldom do we encounter the classical exophthalmic goiter. The usual case presents aspects of it, as rapid heart, dyspnea, tremor, loss of weight, palpable or definitely enlarged thyroid, with disturbances of the sympathetic or cerebral nervous system and basal metabolism in some combination. One constant characteristic is the cyclic phenomona of this symptom complex, and this is of further interest because the disease does not occur until the period of sexual activity, and that activity is cyclic also. The relationship of the endocrine, autonomic nervous and chromaffin systems with manifestations of their disturbance of equilibrium; the thyroid pathology per se and the accompanying lesions in other organs must be kept in mind. All these are necessary to arrive at a correct conclusion.

I believe from a clinical standpoint they may be grouped and by so doing less confusion in the treatment will be accomplished. I use the following brief classification:

A. PRIMARY.
  a. Fulminating.
  b. Acute.
  c. Subacute.

B. SECONDARY.
  a. Typical.
    1. Adolescent.
    3. Mature.
  b. Atypical.
    1. Mature.

C. NEUROTIC.
  a. Adolescent.
  b. Adult.

PRIMARY:

The typical exophthalmic goiters: In these, gland changes are characterized by round cell infiltration, hyperplasia, a true papillary proliferation of gland substance forming a picture sometimes closely resembling malignancy. Here associated disease plays a minor role. The hyperthyrodism symptom complex and derangement of the thyroid congeners is the question at issue. The history usually elicits, good health, previous to the attack, but some specific instance can invariably be found which acted as the fuse. A psychical or physical ordeal most often being the antecedent.

a. Fulminating type.

It is sudden in approach. Tachycardia, dyspnea, palpitation, tremor, insomnia, slightly or very much enlarged thyroid, staring eyes, delirium, vomiting, rapid emaciation, high basal metabolism and usually death in a few days or weeks. These cases are tragedies. A hair perhaps divides the false and true line of treatment. Rest, quiet, reduction of psychical trauma, and expectant treatment offers the only ray of hope. Surgery will hasten their demise.

b. Acute type.

In this group tachycardia, dyspnea, palpitation, tremor, eye signs, enlarged gland, extreme nervousness, delirium, emaciation and often fever develop more slowly and likewise as slowly subside until the patient begins to regain weight showing a complete recession. The treatment during the active phase requires tact, close observation, reduction of psychical trauma to the minimum, rest, sedatives and supporting measures until there is a return to normal weight. They should then be given active treatment.

c. Subacute type.

This type runs a less stormy course. They present the usual signs and symptoms, except the gland may be very little enlarged, there is no delirium and little or no fever but they do lose weight. As soon as the weight balance is maintained they should be given active treatment.

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*Read before the Republican Valley Medical Society, Holdrege, Neb., Oct. 28, 1920.

The active treatment in these cases presents a mooted question. At the present time I feel safe in saying we have no ideal. There are so many elements involved that it is difficult to establish the ideal. In my opinion, it is the act of prudence to err on the side of safety, and never burn bridges behind oneself. Circumstances often rule. I believe that the Roentgen-ray is the proper preliminary treatment. When I say this I do so with the full knowledge that many will differ with me but I believe time will prove it logical. However, when I recommend the X-ray treatment I also assume that the roentgenologist is a trained man, and always with the understanding that surgery may subsequently be required but never as a surgical emergency. They should all be hospitalized and supplemental medical measures are essential.

SECONDARY:

This type presents glandular hypertrophy, round cell infiltration, adenoid proliferation either single or multiple with or without increased fibrous tissue colloidal and cystic pathology.

a. Typical.

1. Adolescent type.

Frequently a palpable goiter without marked symptoms has been present in these cases. They usually exhibit relatively mild reactions, unstable endocrine system, often are below par from overwork, worry or social activities and many have focal infections. Removal of foci of infection, rest, sedatives, correction of menstrual disturbance which is often present, and general hygienic measures are I believe the line of treatment indicated at least as a preliminary measure. They are young and many cases subside. Marriage often works wonders and this holds true in these cases. If there is a steady progression of symptoms with repetition of cycles of exaggerated activity it is safest to administer more active treatment. If there is no cystic or adenomatous pathology I would recommend X-ray treatment. If there is then I would use surgical measures.

2. Mature type.

In this class of cases adenomatous, cystic or colloid goiters have been present for months or years. They likewise have associated lesions in other parenchymatous organs. Often they show pelvic and cardiac pathology. I believe that in this type focal infection plays a larger role than in any of the other types. If not upon the thyroid itself at least upon the other parenchymatous organs which must stand the brunt of the invasion when the thyroid becomes toxic which it is very apt to do. When upon these organs is thrown the effects of an active toxic thyroid, with symptoms of tachycardia, tremor, dyspnea, palpitation, occasionally eye signs and increased metabolism adding insult to their already damaged cells, the patient is in a precarious situation and the end results are many times problematical. They may become grave risks. "Innocent goiters" is camouflage. There is no such thing. They are treacherous affairs and sooner or later undergo structural changes and become toxic or malignant. Malignancy of the thyroid is one of the most difficult conditions to diagnose early. A few become calcified, and some it is true remain apparently dormant until death from other causes. A large percentage sooner or later become toxic. The danger of these active complications far outweighs any personal reason for their retention. Therefore I believe that it is the duty of every physician and surgeon to recommend active treatment of all benign goiters and no deferring should be entertained when the early symptoms of toxicity develop. Personally I would recommend surgery in this class.

If the X-ray is used I believe that it is safest to apply the same rules as in surgery, and that is they should be hospitalized and not operated upon while in the ascending phase of the cycle. If there are foci of infection they should be removed, preliminary to the thyroid treatment, but in the case of pelvic pathology I would defer this until subsequently.

b. Atypical:

Maturity is attained before this class presents any noticeable thyroid enlargement or symptoms. The symptoms are usually mild, onset gradual and degree reached not severe. They invariably complain of conditions far removed from the thyroid, and are very apt to have menstrual disturbances. They are the type that is frequently overlooked by the busy practitioner, because of their insidious character. Cystic and adenomatous conditions require surgical treatment. In the other forms the X-ray treatment may be more desirable. In either class medical measures should be supplemented to correct other deranged functions.

NEUROTIC.

This type presents hypertrophic adenomatous, round cell infiltration, with or without colloidal or cystic changes. Because of the very nature of these subjects I believe that neurotics and mental defectives should be in a separate classification.

a. Adolescent.

This type is very apt to show the taint. They may be hysterical, precocious or present other evidences of an early psychosis before thyroid symptoms develop. Increased pulse rate, tremor and enlarged gland are the usual signs of a beginning intoxication, supplemented by others of a greater or less degree. The typical exophthalmic type is not seen. They do poorly under any line of treatment. I believe that ordinarily a competent neurologist is best fitted to care for them.

b. Adult type.

These cases show the neurotic base with indefinite symptoms as preliminary agents. If goiter was present in adolescence it may become enlarged. Tachycardia, dyspnea, tremor and loss of weight are present. To these are added many vague and difficult combinations of coincident complaints. Seldom is the eye sign characteristic. They are very susceptible to adrenalin and thyroid substance.

The patient's previous condition is a valuable guide. They require close observation, tact and patience. Hospitalization is essential. The neurologist will be of great assistance, probably rendering the patient more real service than the surgeon. Surgery may be resorted to if some marked reason develops, X-ray treatments may be valuable, but both will be disappointments so far as relieving the patient's general condition is concerned.

It has been my endeavor to outline these types as briefly as practical being conscious that volumes might be written on any one phase and that equally good men differ radically on some questions involved. I fully realize that the division is subject to criticism, it is like the law of all rules. Any classification to be helpful must be workable, reasonably applicable and allow for unusual details to fall into place indicated. If one prefers surgery primarily to Roentgen treatment he may use that without disturbing the classification. I do not claim any originality. The plan is based upon a correlation of other classifications, which I have found too cumbersome to be of very much assistance. I am using this plan outlined in my own work and find it helpful.

Discussion.

Dr. Arthur L. Smith, Lincoln.—This paper of Dr. Johnson's is indeed unique in that it does not claim that surgery cures every disease related to the thyroid gland. It is so seldom we hear of conservative surgery in connection with the thyroid gland, that Dr. Johnson's conservation and fairness show that he has made a wide study of hyperthyroidism and it should leave a lasting impression upon all of us. The pathology of exophthalmic goitre and hyperthyroidism is very interesting in the light of the work recently done by Goetsch. Mild hypertrophy and hyperplasia of the alveolar cells is found in hyperthyroidism of puberty, at the menstrual period and in pregnancy. Advanced hypertrophy and hyperplasia of the same tissue is found in exophthalmic goitre. Hyperthyroidism proper is diagnosed pathologically by a hypertrophy and hyperplasia of the interstitial cells of Wofler in circumscribed nodules. Rarely there is a diffuse adenomatosis.

We must differentiate this condition from sympatheticotonus, incipient tuberculosis, effort syndrome, psychasthenia, psychoneurosis and neurasthenia.

Lately we have been led to believe that the rate of basal metabolism if increased is pathognomonic of hyperthyroidism. This is not true, for there is usually an increase during menstruation, at puberty, in pregnancy, in Frolich's syndrome, gigantism, diabetes, hyperpituitarism and exercise. The following drugs change the rate: adrenalin, atropin, caffein, thyroid, potassium iodide, morphine, and Roentgen exposures. The basal metabolism test simply measures the amount of toxicity. I think our attention should be called to the great work in goitre prophylaxis being done by Kimball and Marine of Akron, Ohio. To 2000 school children .2 grain of sodium iodide was administered for 10 days twice yearly. Only five in this group developed enlarged thyroids. In 2000 untreated cases, 495 enlarged thyroids were present.

In conclusion, I want to congratulate Dr. Johnson on the accurate, scientific paper which we are so fortunate to hear, and that, even though a surgeon, he can appreciate the fact that medical treatment is of value in hyperthyroidism.

The Epidemiology of Communicable Diseases.*

Henry Farrell, M. D., Kearney.

In spite of the many and important advances made in recent years in the epidemiology of the communicable diseases, such as measles, whooping cough, smallpox, scarlet fever and diphtheria, the majority of the lay people and to some extent our profession at large, have failed to profit in a corresponding degree. It is for this reason that I appear before your society today, not in the role of an epidemiologist, but to discuss and dwell briefly on the modern trend of thought relative to the causes, modes of conveyance, and control of these infectious diseases, and to relate my own personal experience and observation concerning their epidemiology. It takes time, keen observation, education of the public and plain facts to dispel many of the old theories relative to the cause of the communicable diseases, and in the past ten years the epidemiologist has assumed this task and made considerable progress. This has been done against great odds at times, especially among the older members of the profession, and a public sentiment filled with vague ideas and slow to convince of definite facts.

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*Read before the Republican Valley Medical Association, Holdrege, Neb., Oct. 28, 1920.

In the light of present day knowledge it is not to be wondered that the path of the progress of science is paved with abandoned theories. In years gone by people were led to believe that epidemics were the result of influences which were for the time mysterious, invisible and unknown—that the impalpable miasms or germs had a constant tendency to escape from their places of origin and fasten themselves upon the unsuspecting victims who came within their reach. The supposition was that they were mostly airborne, and that soil, filth, cold damp stormy weather and fomites played an important role in their cause and transmission.

The wonderful science of bacteriology has been a great reconstructing force in preventive medicine and brought about a modern conception in epidemiology. It remained for Chapin, Hill, Wright, Lelean, Rosenau, Zinsser and other painstaking and far sighted investigators to apply the correct principles of bacteriology to the problems of infection and give us a clear understanding as to the means of transmission of the communicable diseases.

By careful investigation and keen analysis, Chapin, gave new and admittedly correct values to many of the different factors that promote or retard the process of infection. As Riggs aptly remarks (U. S. Navy Med. Bulletin, Vol. 13, No. 3) the appearance of Chapin's classical work in 1910 practically demolished the theory of infection by fomites, such as toys, books or clothing. Only a few years previous to this period, great stress was laid upon the fomites theory in the transmission of yellow fever, until in 1901 Lazear bared his arm and showed the world that the parasitic infection, which caused his untimely end, was conveyed by the stegomyia fasciata and not by clothing or fomites of any kind, and what is true of yellow fever, although an insect borne disease, can be equally applied to such diseases as measles, scarlet fever, and diphtheria, and in my own opinion, smallpox.

In the light of present day knowledge it seems perfectly evident that persons, not things, carry and harbor bacteria, and that outside of the human host their lives are of extremely short duration. In reference to fomites I mean such articles as books, clothing, furniture, the walls of the room, etc. Not by any means do I undervalue the method of what is known as concurrent disinfection in the taking care of soiled linen, handkerchiefs, towels, etc., and the boiling of drinking glasses, cups, table ware and other eating utensils. This latter is a fair method of prevention and of benefit to the patient from a sanitary standpoint, and to those in attendance or in personal contact; but terminal disinfection, after recovery, is another matter and an unnecessary follow up course to attain the desired end. As required by the Department of Public Welfare, State of Nebraska, when premises are to be released from quarantine or placard, the giving to patient and those in contact an antiseptic bath and washing the doors, window glasses, and woodwork, as applied in such diseases as measles, diphtheria, chickenpox, influenza, scarlet fever and mumps, is a procedure unwarranted and useless as an act of prevention.

Just in recent years, many times, have I seen terminal disinfection and fumigation performed in school houses, public buildings, dwellings and stores, when I thought the act was harmful, not from the standpoint of cleanliness, but because with the physican or health officer, it was nothing more than a delusion and with the public it created a false sense of security.

Bordering on the absurd and impractical are some of the rules laid down by the State Department of Health in reference to public funerals: "Public funerals are prohibited when the deceased has died with smallpox, diphtheria, cerebrospinal meningitis, poliomyelitis, or scarlet fever." If the patient died of diphtheria public funeral may be held after two cultures from the nose and two cultures from the throat of the contacts at least 24 hours apart and at least eight hours after an antiseptic has been applied to the nasopharynx, prove negative." In case of cerebrospinal meningitis, two cultures must be taken five days apart and prove negative before a public funeral may be held. "The body shall be placed in either a hermetically sealed coffin or a coffin with the cover screwed down and cover glued to the body of the coffin."

There is no objection to having a glass window in the cover to view the remains, but, "under no condition or circumstances is the cover to be removed," for fear, I presume, the bacteria might take wings and be scattered by the four winds and by chance infect the innocent mourners.

Undertakers, as a rule, have a proverbial horror of embalming the body of a patient dying from any of the communicable diseases and there is some reason for this when they consult rules and regulations of the Department of Health. The precautions are as follows: "It shall be the duty of the embalmer to wear a gown from the neck to the ankles, to wear rubber gloves, and to have the head covered during the embalming." But he has the assurance, and what seems superfluous instructions in the last lines and that is, "When the body is in a coffin as described above, and taken to the church before burial, it will not be necessary to disinfect the church." Many physicians still believe to a certain extent in the fomites theory of communicating disease and would not think of attending a patient infected with smallpox, diphtheria, or scarlet fever, without wearing an extra gown or ulster and a head covering to be immediately discarded after leaving the household, and yet in those who do not exercise this precaution, I have never seen a single instance where a physican carried the infection from one patient to another. My own experience and observation is that infection by fomites is of little moment and practically all those cases can be traced to transmission by contact.

The theory of aerial transmission of disease has been thought and believed from time immemorial, for it seemed a reasonable way of explaining the phenomena of infection. Of late years, however, the air-borne theory as a mode of conveyance of infection has been discarded even more remotely than the fomites theory. Bacteriology has taught us that former ideas in reference to aerial transmission are entirely erroneous. There is no good clinical evidence that any of the communicable diseases are air borne, none are likely to be dust borne, and they are spray-borne only for a few feet. According to Chapin, scarlet fever and diphtheria can be cared for in the same ward with other diseases, without extension, if cleanliness be maintained and infection by contact avoided.

This brings us to a logical and better explanation of the phenomena of infection and that is by contact with carriers or missed cases. In every epidemic we have the "missed cases" in which the infection is so mild that it fails of recognition. Also, there are the atypical cases, which are a part of the epidemic and yet never become identified. Among children in the school room or on public play grounds this class of patients do much harm in disseminating infection, and it is largely through mild and unrecognized cases that scarlet fever is kept alive for months. Especially in the early stages of the disease are the missed cases a prolific source of spreading the infection, for the early stage contrary to former belief, is the period of greatest infectivity. Carriers, also play an important role in the transmission of communicable diseases especially in diphtheria and influenza. Rosenau says that diphtheria is carried by about one percent of healthy school children, and in the case of influenza bacillus the percentage is likely to be much greater.

From the above it is easy to surmise that any plan of prevention that does not take into account the carriers, and missed cases, mild, atypical or unrecognized, is sure to be a partial or complete failure. Our greatest asset in the matter of future prevention lies in the education of an intelligent public as to the definite and plausible facts and in the dispelling of abandoned theories. A careful explanation that as vehicles of prevention the performance of fumigation and terminal disinfection are fifth wheels and of far greater importance is infection by contact. Very important is the early recognition of the disease, isolation and individual quarantine, personal cleanliness, concurrent disinfection, and finally the instruction in schools and homes that every case is a carrier, and that the disease is spread and conveyed by droplets and secretion coming from the mouth, nose and throat, when these patients sneeze, cough and expectorate, while in close proximity to other individuals free from the disease.

Permit me, in conclusion, to give you a good example illustrating how, many times, a disease is spread and communicated. Some few weeks ago the presidential special train bearing Gov. Cox rolled into Kearney, eastbound just at noon. The sun was in the south and I stood some twenty feet to the north side of the car and obtained a good view of the candidate and the crowd in front of him. The Governor appeared on the rear platform facing the west in the shadow of the covering overhead. Directly in front of him in the sunlight were dozens of upturned faces, part of them with mouths widely open, eager to swallow every utterance, and I noticed that with each vehement or forceful expression there emitted from the speaker's mouth, jets of saliva which flowed in a constant stream, easily seen as it came from the shadow to the sunlight, and fell into the crowd below. Had Gov. Cox been afflicted with any of the communicable diseases, he would have literally sprayed with infectious bacteria thousands of enthusiastic citizens all the way from Ohio to the Golden Gate and back through fourteen states; but assuming that he was perfectly germ free of the spray-borne diseases, he merely spread the gospel of democracy and for his first appearance on the western front he performed the task exceedingly well.

Discussion.

D. D. Sanderson, M. D., Lincoln.—Dr. Farrell has certainly emphasized the two great thoughts in the prevention of disease. That is the control of the carriers and the cleaning up of dirt and filth. It would certainly be time and money well spent if his article was printed in every paper in the state. It should especially be brought to the attention of the various city councils. There are very few towns that do not have their dumping ground near by. These are but places to grow flies. Also the average alley is lined with either filthy garbage cans or spots where garbage is thrown. The various contagious diseases cannot be controlled until these are cleaned up.

Clinical Diagnosis of Tumors of the Breast.*

Max Emmert, M. D., Omaha.

The propaganda against cancer, which has been carried on through the agency of the press and popular magazines during the past few years, has been productive of much good, and today we are seeing tumors at a much earlier stage of development than formerly. Consequently the responsibility of the physician is greater because he sees more borderline tumors than before and must differentiate between benign and malignant neoplasms at a time when the differentiation is very difficult.

It is my purpose, in this short paper, simply to present some of the fundamental factors, which have been gleaned from recent literature and experience and which may aid in the differential diagnosis of benign and malignant tumors of the breast.

The age of the patient is the first consideration. Bloodgood has shown in a recent report of 885 cases of cancer of the breast that in only 3.9% was the lump observed prior to the age of thirty years and "in 16 cases the age of onset varied from 15 to 25 years." This means that the great majority of cancers of the breast start after the age of thirty but this rule is not infallible, so that we cannot eliminate cancer by age alone.

Trauma of the breast, whether physical or bacterial has an important bearing on this subject. A severe blow or injury to the breast will result either in absorption of the injured tissue or abscess formation within three weeks from the date of injury. Any induration persisting for two or three months after the initial insult should be explored. Acute mastitis occurs very rarely at any period except during lactation, hence any acute process in a breast which is not lactating should be considered of serious moment until proven otherwise. Tumors appearing during pregnancy in patients over twenty-five years of age are malignant in about fifty percent of cases. Moreover, as carcinoma grows very rapidly during pregnancy and lactation, it is best to eliminate the tumor at an early date. Boodgood calls attention to the fact that if the tumor was present prior to the pregnancy, the urgency for operation is not so great but that it should be removed before confinement, preferably at the third or fourth month of pregnancy.

During the period of lactation cakeing of the breast should be carefully watched. Under normal conditions it should either disappear by absorption or break down into an abscess within a period of two weeks. When neither of these results are attained by treatment and the mass remains it is very suggestive of malignancy.

Pain is not an indication of cancer or necessarily of any serious condition of the breast and in the absence of other findings is not an indication for operation. When pain in the breast precedes the formation of a palpable tumor it is safe to diagnose a benign tumor. Recently a lady fifty-five years of age was referred to me with a tumor of the breast with pain radiating to the shoulder and down the arm. Operation revealed a lipoma situated beneath the breast tissue and extending beneath the pectoralis major muscle. This type of tumor in the breast at the age of fifty-five is unusual. Prior to, or during the menopause pain in the breast is very suggestive of chronic cystic mastitis and is caused by the dilatation of the ducts and the formation of small cysts. This condition is quite common, autopsy reports revealing that twenty-five percent of all senile breasts have undergone this change. The etiology of this condition has not been proven.

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*Read before the Botna Valley Medical Society, Sept. 15, 1920.

Pain developing in a neoplasm which has been quiescent for a long period of time is strongly suggestive of malignant change and an indication for exploration. As a general proposition we may conclude that pain occurring prior to the formation of the tumor indicates a benign neoplasm and pain occurring after the appearance of the tumor suggests malignant change.

Discharge of blood from the nipple per se is not an indication for operation; neither is it suggestive of cancer. In the majority of cases it is due to an intra-cystic papilloma which is benign. When it accompanies the formation of a mass, a conservative operation should be performed. When no mass can be felt, an operation is not indicated though the patient should be kept under careful observation for several years. I have noted several cases in which the mass was felt before the discharge was noted, and decreased in size or disappeared after the discharge from the nipple became apparent. This occurs in simple cysts. Sinus formation in the breast practically never occurs with cancer but most frequently with pyogenic or tuberculous infections. In pyogenic infection it occurs early in the development and heals rapidly. A tuberculous sinus appears after the sixth month and rarely heals.

Ulceration of the skin overlying a neoplasm of the breast is indicative of syphilis or cancer and can be differentiated by blood examination.

The association of enlarged axillary glands with tumors of the breast has always been viewed with alarm and the significance of this condition has been greatly overestimated. Palpable axillary glands have very little diagnostic or prognostic importance. They are frequently present in the absence of breast disease, present with all forms of mastitis, with leukaemias, with syphilis, with benign and cystic tumors, etc. When associated with cancer of the breast it is not conclusive that they are metastatic from the breast and they are therefore not a contra-indication to operation. Very rarely can the physician determine definitely by palpation alone whether or not the glands are malignant.

Between the skin and the normal breast tissue is a subcutaneous layer composed of connective and adipose tissue which permits of free mobility of the skin. In the presence of benign neoplasms there is little or no disturbance of the normal balance of this tissue unless the neoplasm is very large. In cancer however there is an atrophy of this tissue which causes more or less fixation between the skin and the neoplasm and produces a dimpling of the skin when an effort is made to test the mobility of the skin or of the breast. This is one of the earliest signs of cancer and very important when making a differential diagnosis of borderline cases.

By far the most important single diagnostic factor in connection with tumors of the breast is retraction of the nipple. This condition may be of congenital origin, or associated with an acute infectious mastitis. It may also follow the sudden removal of a nursing baby from the breast. When these three possible causes can be eliminated, then sudden retraction of the nipple is an urgent indication for immediate operation and one should not wait for the appearance of a tumor. In cancer of the breast it frequently appears before the tumor can be distinguished.

Any irritation, eczema or ulceration about the nipple or areola should be carefully treated. When it does not respond to cleanliness and medical treatment, a blood examination for syphilis should be made. With the elimination of syphilis the condition should be viewed as a beginning Paget's disease and the entire breast removed. Authorities state that there are no recorded cures of Paget's disease after the neoplasm has formed.

Multiple tumors in one breast or single tumors in both breasts are in the majority of cases benign and belong to the class of simple cysts or intracanalicular papillomas. However as malignancy is a possibility one of the neoplasms should be removed for the purpose of diagnosis.

The differential diagnosis between chronic cystic mastitis of the single cyst type and cancer is frequently very difficult. Both occur in the cancer age and are very similar to the sense of touch. Cystic mastitis occurs more frequently in breasts which have never lactated. It is usually more painful and sensitive than cancer and the axillary glands are usually more sensitive to examination. Malignancy occurring in chronic cystic mastitis has been largely over estimated. Keen states that fifty percent become malignant, but when we remember that autopsy shows twenty-five percent of all senile breasts have undergone the changes which characterize chronic cystic mastitis, we can not accept Keen's statement as final. I recently operated upon a large medullary carcinoma of the breast superimposed upon a chronic cystic mastitis in a woman who had borne and nursed several children, which illustrates my conclusion, namely; there are very few fixed rules pertaining to tumors of the breast, and every tumor of the breast is an indication for operation.

References.

Bloodgood—Reprint from Binnie's Surgery.
Keen—Keen's Surgery.

The Treatment of Injuries of the Spine.*

H. Winnett Orr, M. D., F. A. C. S., Lincoln.

The diagnosis and treatment of painful back conditions have received too little consideration. All kinds of congenital or acquired anomalies, back strains, and even fractures have been and are being treated as "lumbago" or "muscular rheumatism." Liniments and plasters are still being applied to spine fractures and Pott's disease.

The X-ray has contributed a good deal to clearing the atmosphere on this subject. Even with the X-ray, however, there is still confusion. Many spine lesions do not lend themselves to X-ray diagnosis. Also, many other bone and joint changes in the spine are only apparent to the expert X-ray diagnostician.

In the consideration of any spine condition it is of the greatest importance to arrive at a diagnosis. However, one must bear in mind that in many painful spine conditions, treatment may have not only a curative but a diagnostic value.

One of the outstanding lessons of the war was that early reposition of injured parts and immobilization during healing are the cardinal requisites in all bone and joint injuries and inflammations.

The conclusions reached during the war in this regard are diffusing rapidly through the medical profession in so far as injuries to the extremities are concerned.

In arthritis, osteo-arthritis, and even in fractures of the spine, however, it is still the exception rather than the rule to find adequate treatment along these lines.

During the past year I have been more than ever impressed with the fact that because of failure to apply these principles of early reposition and adequate fixation in spine conditions, our patients suffer a large amount of preventable disability. The early protection of injured and inflamed parts against motion minimizes pathological changes and increases ultimate function. A spine brace or even a plaster jacket is not a very serious matter for a few weeks, especially if its use is to provide against months of subsequent disability. Moreover it is important to recognize the importance of these methods in the apparently milder cases which sometimes result in permanent disability.

To reduce the discussion to more definite terms I desire to consider briefly a few particular conditions:

Back Strain.

This condition follows a lift or fall. It may come in older or heavier persons following a stoop or bend. The condition of back strain may be exactly what the name implies. I find patients coming with what they call back strain as a result of many conditions. Oftentimes such patients have (as pointed out by Dr. Z. B. Adams of Boston and others) anomalies of the fifth lumbar vertebra. A variation in size, form, or position of this vertebra renders one especially liable to injury on slight provocation. Sacro-iliac strains, early Pott's disease and even minor fractures come for treatment as back strain.

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*Abstract of an address before the Fellows of the Mayo Foundation at Rochester, Minn., Dec. 3, 1920.

The treatment must usually be the kind of rest that can be obtained only by a suitable splint. Of all spine splints the plaster jacket is the best. An efficient Ridlon or Taylor splint will often do. Complete relaxation of the muscle spasm by rest in bed or even by anesthetic is a necessary preliminary in some cases. Dislocation or misplacement of a vertebra is rare except at the lumbo-sacral junction. When this has occurred manipulation under anesthesia must be done.

Under this same heading comes sacro-iliac strain which occurs in the same way with an acute pain in the region of the sacroiliac joint and more or less subsequent pain and disability. There is often sciatic neuritis or (as pointed out by Dr. Goldthwait) symptoms of acute bladder disturbance. In the unrelieved cases a deviation of the spine may occur. Disability is often severe and protracted. Some of these cases are classed as dislocations. In any severe prolonged case—relaxation under anesthetic—manipulation to make sure of proper position of parts—and adequate fixation are definitely indicated. For the latter purpose plaster of paris spica, adhesive strapping and pelvic belt are useful in the order given.

Spine Fractures.

Many of these without cord lesions are unrecognized. Even those with fairly severe symptoms in the absence of cord involvement are frequently untreated. At the other extreme, patients with fracture of the spine and paralysis are often pronounced hopeless at once and allowed to go down swiftly to death without any effort even to determine what are the possibilities in the situation. Not all spine fractures can be diagnosed at once. In every case of fracture, however, and in most suspected cases the fundamental requirements for the treatment of every fracture should be satisfied. That is, relaxation of spasmodically contracted muscles should be secured (by anesthetic in most cases), normal relationship of parts in the vicinity of the injury should be provided for, and finally—and of the utmost importance—the parts should be carefully immobilized for a sufficient length of time to afford an opportunity for healing.

For most regions of the spine no splint is better than a properly applied, well-fitting plaster cast. In the cervical and the upper dorsal regions the head must be included in the fixation apparatus. In injuries in the lumbar region the cast must be a single or double spica to secure fixation of the spine. The illustrations convey an impression as to the use of plaster in this way. The time has passed when any surgeon may say that patients will not tolerate plaster used in this way. Out of an experience of thousands of jackets and spicas put on I can say that it is extremely rare to have to remove one because of discomfort. Much more commonly the patient clamors to have a new cast put on, if the first has been removed prematurely. Spine fractures treated in this way will recover almost as quickly as fractures of any other sort—neglected they cause interminable disability.

Infections of the Spine.

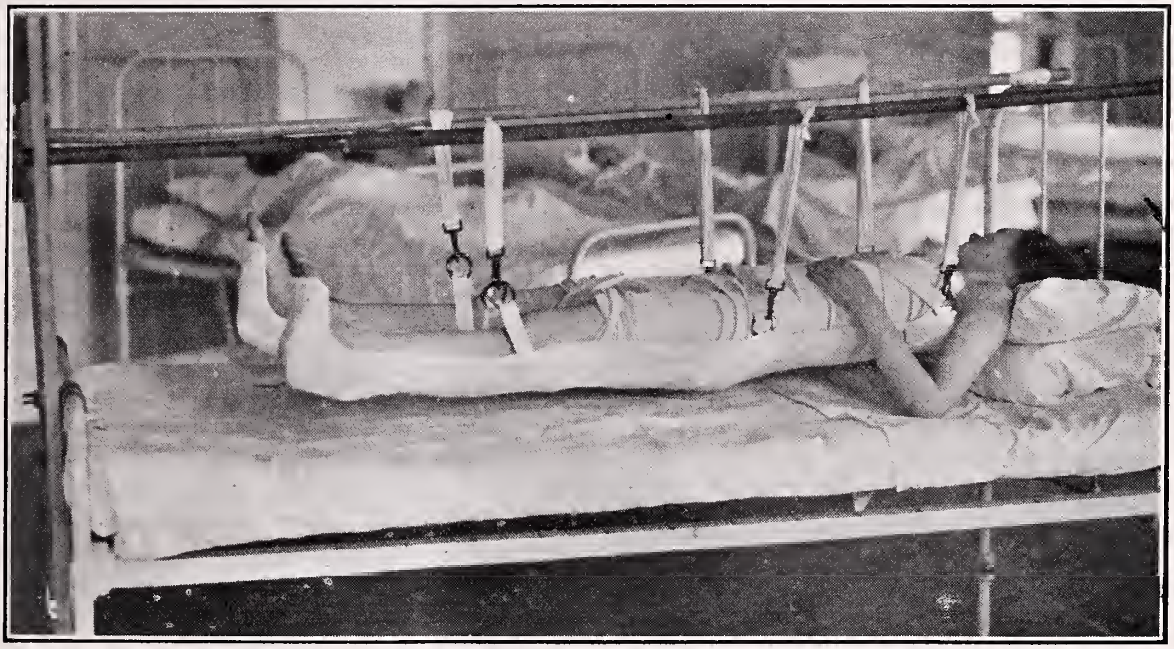
Pott's disease or tuberculous disease of the spine is the infection commonly thought of. And Pott's disease is by all means the spine infection of first importance. During the past year I have seen, in addition to a number of cases in children, seven cases of advanced tuberculous damage to the vertebrae in adults. All of these cases had been treated for several months or longer for back strain, lumbago, neuritis or arthritis of undetermined character. Every case of this sort responds almost instantly to treatment by recumbency combined with plaster jacket. One point to which it is particularly desired to call attention is that it is not "rest" in the therapeutic sense to send patients of this sort home from work or even to put them to bed. Strict recumbency and the plaster jacket are usually both necessary even in the milder cases to secure prompt relief from pain and early cure of disability.

Also, the mere occurrence of tuberculous infection in a vertebra is in my opinion often a direct consequence of the failure to provide early adequate treatment for a preceding spine injury. In almost every adult case of Pott's disease the symptoms are directly continuous from the time of a definite spine injury.

A painful process involving several vertebrae or entire regions of the spine is often the effect of a generalized osteo-arthritis. In the early stages of such conditions when there is definite focal infection in teeth, tonsils, gall-bladder, appendix or elsewhere all symptoms may disappear with the drainage or removal of the original focus.

A point too often lost sight of however, is that the spine itself may become an independent secondary focus and require treatment as such. Injury to the spine may precipitate the arthritic or osteo-arthritic spine condition. During the past year I have seen three cases of severe osteo-arthritis in the lumbar region in patients for whom lumbar punctures had been done. I believe that better attention to the technique and after care of lumbar puncture should be given.

Finally, in all of the severe cases—cases relieved but not cured by recumbency jackets and braces—there is the alternative of complete rest for affected movable portions of the spine by arthrodesis. One may do either a bony fixation of the affected part by Hibbs' arthrodesis operation or by Albee's bone transplant. These procedures have the advantage that they give absolute fixation with a guarantee against recurrence.



My plea then is for early recognition of bone and joint damage in the spine. Diagnosis rests upon pain, lameness, deformity, muscle spasm, and X-ray findings. Treatment must be based upon well understood anatomical facts and physiological principles —restoration of normal relationships and maintenance of physiological rest. Exact details of method do not matter. But the principles if kept in mind will guide the surgeon to the relief and cure of many patients who are now permitted to drift into partial or complete disability.

Syphilis As Seen at the Night Venereal Clinic, University of Nebraska Dispensary.*

C. R. Kennedy, M. D., Director of the Night Clinic.

This report is based on the analysis of 300 cases of venereal disease from our night clinic and does not attempt to go into the literature, but simply discusses conditions as we find them.

First, as to frequency, we find the following:

Total cases	300
Syphilis	243
Gonorrhea	75
Chancroid	3

Eighteen of the cases of gonorrhea and two of the cases of chancroid had syphilis also.

Early Symptoms.

It is impossible to give exact figures as a great many had no symptoms but came because their partner, either wife, husband, or friend had some trouble. A number of men had been given treatment in the army and wanted more.

Of the active symptoms, chancres, sore throat and mouth, and skin eruptions come first. Then headaches, eye trouble and nervous symptoms follow. A few with pain around the heart, painful bones and joints and indefinite distress came next. A few women came on account of miscarriages and the rest were either referred by the other departments or were discovered in the routine examination.

Origin of Infection.

The majority of cases arose from illicit intercourse; second, came wives infected by their husbands; then husbands infected by their wives; fourth, hereditary infection, and last, extragenital and innocent infections. This last source of infection, although not common, is still very important and one should be on the lookout for it. Owing to the fact that a chancre is not always present, these cases may be overlooked.

Extragenital infection may arise from drinking glasses, dishes, pipes, cigarettes, blow-pipes, cornets, etc. Tattooing is a frequent cause; circumcisions, dental work, and minor operations are also causes. Infected razors are a source of infection. We have one such case in our series. I have seen one case of a moving picture operator with a chancre on both upper and lower lips. Whenever the film broke, he would moisten it with his lips and stick it together. I think this irritated them at this point and that he acquired the spirochetes from kissing some one with mucous patches.

Kissing is a common cause of lip chancres. Schamberg reported a case of a young man who infected six girls, and one of these girls infected another young man the same evening, acting as a carrier for the infection. Another girl developed a chancre by kissing one of these girls and still another young woman developed a chancre on the cheek from a kiss by one of these girls, making eight labial and one cheek chancre from one source of infection.

A great many extragenital chancres arise from perverted sexual habits. Babies may infect their wet nurse or the nurse the baby. Physicians may be infected during examination of the patient. I know of an oculist who acquired a chancre of the conjunctiva as the result of a patient coughing in his face. Nurses are sometimes infected by patients.

According to statistics, 94% of chancres are genital and 6% extragenital, but in some countries such as Russia where the people all live together, extragenital chancres reach as high as 20% to 25%. In view of the fact that extragenital chancres are fairly common and that we may get a generalized syphilis without a chancre, we must not rely too much on the absence of history of chancre in diagnosis.

Symptoms of Syphilis.

I shall not attempt to enumerate the symptoms of syphilis as it may attack almost any tissue in the body and simulate almost any disease we can think of, and the diagnosis is not based on the individual lesion but on the history, physical examination and Wassermann test.

In taking up the history, we first have the initial lesion which, if a typical indurated chancre, is quite positive, but we find many pitfalls here.

First, it may be a very small, non-indurated sore and heal in a short time; second, they may be multiple, as we find in 20% of cases, and resemble chancroid; third, chancroid may be present and mask the appearance of the sore, so even if we prove the sore to be chancroidal, there is no proof that the spirochete is not present also; fourth, the chancre may be intraurethral, in the vagina or otherwise concealed; fifth, there may be no chancre.

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*Read before the Omaha-Douglas County Medical Society, Oct. 12, 1920.

Next, we think of the so-called secondaries; that is, the lesions of skin and mucous membranes. The early rash or roseola may be very slight and not noticed or may not occur, mucous patches may be absent or few in number and other skin lesions are frequently absent. I think the most reliable sign at this time is a general adenopathy and we seldom find a general adenopathy except in acute conditions or in leukemia, which is not due to syphilis. This means inguinal, axillary, cervical, post-auricular and epitrochlear on both sides.

Third, we find the later lesions, such as gummata. These are quite characteristic but may be confused with other things. The ulcerative lesions may be confused with tuberculosis, leprosy, epithelioma, and when in the mouth may be simulated by Vincents angina or non-specific ulcers.

Gummata of internal organs simulate tumors of various kinds. Syphilis of the bones is quite characteristic as shown by the X-ray, but still there is a chance for doubt here. Aneurysm is usually the result of syphilis, but by the time this diagnosis is made, it is pretty late to do the patient any good. Syphilitic disease of the nervous system frequently resembles disease of other origin, although locomotor ataxia is almost always luetic.

Of course, when we get a clear cut history and a combination of positive signs, we are quite safe in our diagnosis. But if the history is not complete and the patient has no definite symptoms or findings, we must fall back on the Wassermann test and I feel at present that this is a very important thing in the diagnosis. One must use some judgment in its interpretation and should work with the pathologist long enough to understand what the meaning of his findings are. Quite frequently several blood tests will be necessary to prove the diagnosis.

Treatment.

The treatment of syphilis consists in the use of arsenic in the form of salvarsan or neosalvarsan, mercury, and potassium iodide; although there is some discussion as to the value of the latter.

Our routine at present consists of salvarsan .1 gramme per thirty pounds of body weight, or its equivalent in neosalvarsan given intravenously twice per week for five doses, followed immediately by mercury salicylate in oil, one grain, hypodermatically twice a week for eighteen doses; then a Wassermann test.

Without regard to the Wassermann report, we then give salvarsan twice a week for three doses, then mercury twice each week for twelve doses. A Wassermann test is then taken and the patient allowed a couple of weeks rest. If the Wassermann test is negative, the first course is repeated and after a short rest the blood is again tested. If it remains negative, the patient is kept under observation, tests are made every month or two for a while, and one or two short courses of treatment are given. If the patient remains Wassermann negative and symptom free for two years, he is considered cured. A spinal fluid test is not always made on account of the difficulty of getting the patient's consent.

When the Wassermann test remains positive after the third course of treatment, an intensive course of 1.8 grammes or three doses of arsphenamine are given in four days, and if this fails the patient is treated intermittently, depending on a long course of treatment for cure.

The reason for the so-called rests is based on the fact that spirochetes grown in the presence of small amounts of arsphenamine develop a resistance to it amounting to five or six times the original resistance, and with mercury the resistance may be increased up to seventy times. In some cases it is best to extend these rest periods to eight weeks.

Choice of Preparations.

In regard to mercurials, we are using 10% mercury salicylate in palmitin to which a small amount of creosote is added. It is given in the buttocks, alternating sides. A Luer all glass syringe is used with a long steel needle.

In private work, I prefer the ampules of mercury salicylate in cocoa butter as being handier and more agreeable. As to arsphenamine, we prefer that made in the United States. We have used almost all kinds, foreign and domestic, and have found this the most satisfactory.

It is given by gravity, each decigram is dissolved in 25 cc. distilled water and neutralized with sodium hydrate till clear; then a couple of drops more of sodium hydrate are added. The patient gets up immediately and goes home. There are no immediate reactions and very few later ones if the patient's stomach is empty.

At present we are using neoarsphenamine of United States manufacture, but as yet cannot pass on its value. It is given by gravity using 5 cc. of water to each decigram, using cool water and not allowing it to go above seventy degrees and mixing carefully with little agitation. Never allow it to stand over twenty minutes.

There are a few precautions necessary in the use of neoarsphenamine, as heating above room temperature increases its toxicity a great deal, and shaking a solution of neoarsphenamine with twice its volume of air for ten minutes increases its toxicity four fold.

In regard to reaction following salvarsan and neosalvarsan, we have had very few of them with the present products, but the technique must be carefully carried out.

In using arsphenamine, it should be thoroughly dissolved in freshly distilled water. Normal saline is not only unnecessary but is undesirable. Then neutralize with sodium hydrate solution free from carbonates. The sodium hydrate should be added until the solution is clear and then one or two more drops added. This gives us the mono-sodium salt of arsphenamine. At present the tendency is toward the use of di-sodium salt which is obtained by adding one third more sodium hydrate solution. This is a clear amber solution which is readily soluble and is suitable for intravenous use.

Neoarsphenamine may be dissolved in distilled water, using not less than 2 cc. per decigram of neosalvarsan and preferably more. We prefer 5 cc. If given with a syringe, a small needle should be used, and it should not be given in less than five to ten minutes or one minute per decigram.

All ampules must be inspected for cracks in the glass and to see that the color is unchanged. If it is not of the proper color, return it and the company will replace it.

Usually the more slowly it dissolves, the more toxic it is; and the more odor there is to it (an odor of garlic or ether), the more danger of an immediate reaction of the socalled nitroid type.

I have always thought the American products less toxic than the foreign and this is borne out by the following table of toxicity. The following table is based on milligrams per kilogram of body weight in white rats:

Arsphenamine — Maximum Tolerance.

U. S.	German	French	Canadian	Japanese
180	120	60	80	140

Minimum Lethal Dose.

U. S.	German	French	Canadian	Japanese
220	140	80	100	160

Neoarsphenamine (Maximum Tolerance).

U. S.	German	French	Canadian	Japanese
420	260	120	200	360

Neoarsphenamine (Minimum Lethal Dose).

U. S.	German	French	Canadian	Japanese
500	300	280	150	

Comparison of Arsphenamine and Neoarsphenamine.

There is some discussion as to the relative efficiency of arsphenamine and neoarsphenamine, but experiments indicate that, although neoarsphenamine should be given in almost twice the dosage to be efficient, even then the margin of safety is greater. We find the minimum lethal dose of arsphenamine to be 220 milligrams per kilogram and that of neoarsphenamine 500 milligrams per kilogram and so it is safe to give it in twice the dosage of arsphenamine instead of 50% greater.

According to our experience, there can be no routine treatment for syphilis, but every case must be watched carefully and treated thoroughly until the patient remains symptom free and Wassermann negative. In order to show this I will review a few cases.

The first table is composed of cases which gave a negative Wassermann reaction after a small amount of treatment.

No.	Stage	Wass.	Arsphenamine	Mercury	Wass.	Remarks
1.	Early 2nd	3 plus	14 doses	17	neg.	Remains neg.
2.	Chancre 1 mo.	4 plus	5 doses	18	neg.	Remains neg.
3.	Secondary	3 plus	5 doses	36	neg.	Remains neg.
4.	Secondary	3 plus	5 doses	36	neg.	Remains neg.
5.	Chancre	2 plus	5 doses	18	neg.	Remains neg.
6.	Late 2nd.	2 plus	5 doses	12	neg.	Remains neg.
7.	No Lesions	4 plus	5 doses	18	neg.	Remains neg.
8.	Early 2nd.	2 plus	7 doses	14	neg.	Remains neg.
9.	Early 2nd.	4 plus	6 doses	15	neg.	Remains neg.
10.	Early 2nd.	1 plus	5 doses	18	neg.	Remains neg.

The next group illustrates the more resistant cases.

No.	Stage	Wass.	Arsphenamine	Mercury	Wass.	Remarks
11.	Late 3rd.	3 plus	15 doses	43	neg.	Remains neg.
12.	Chancre 2 mo.	4 plus	18 doses	60	neg.	One intensive
13.	Early 2nd.	3 plus	20 doses	32	2 plus	Still 2 plus after 2 courses intensive treatment.
14.	Chancre	3 plus	20 doses	32	2 plus	
15.	Late 2nd.	3 plus	6 doses	133	neg.	Remains neg.
16.	Late 2nd.	2 plus	0 doses	107	neg.	Remains neg.

There is some discussion as to whether the intensity of the Wassermann reaction can be increased by giving a small dose of arsphenamine or not. I think it can, as the following cases show:

No.	Wassermann	After Provocative
17.	Plus minus	2 plus
18.	Plus one	2 plus
19.	Plus one	3 plus
20.	Negative	1 plus

In regard to reactions following neoarsphenamine, they are so slight and so few in number that we do not think much about them, but we have kept a record of the last hundred doses just to illustrate their rarity.

Of these, two patients vomited within a short time, and we found later that they had had their dinner before coming. Two others had slight chills, making a total of four reactions in one hundred doses. None of the reactions being of any importance. We have seen no evidence of kidney irritation either from salvarsan or mercury hypodermatically, but one case in the hospital developed a nephritis following mercurial inunctions.

Conclusions.

The diagnosis of syphilis does not rest on any one sign but must be based on history, general examination and the Wassermann test.

The treatment cannot be the same for every case, but it is better to over treat than to under treat.

It is difficult to say when a patient is cured. The best standard we have is the complete absence of symptoms and signs with a negative Wassermann reaction over a long period of time.

With the above standard we can say that it is possible to cure the majority of cases, or at least get them to a point where they will have very little trouble from it, although we cannot be positive as to what may happen in ten or fifteen years.

A Reorganized State Medical Society

C. A. Roeder, M. D., F. A. C. S., Omaha.

> "A philosophy of the unity of medicine, worthy of its name, must begin with the genealogy, schooling and training of men and extend all through its practice; must be charged with the conviction that its future existence depends upon one aim—a single standard of organization from the beginning to end, resting solely upon an altruistic basis." (Paraphrased by the author from Fredrick Ratzel)*

The purpose of this article is in no sense a prophetic one, nor has the author any idea of trying to revolutionize the present conditions of medicine in its broad relations to all other vocations and the general public. Medicine is not entirely scientific, artful or commercial, but it depends upon all three for its progress and cannot sacrifice its dependence upon one for the others. In these history making days, it would be presumption indeed for anyone to attempt to lift the veil that obscures the future and to denote the essential characteristics of the economic and social world of tomorrow. When one pauses to analyze an important situation and assumes that fundamental conditions are ripe for a new and more practical adoption, he must be or have been a student of that particular branch of economics and of such reputation that his words of warning or advice bring heed and cooperation. Knowing my humble and comparative position and realizing that this is my third article in this journal on this subject, I am willing to accept "my Waterloo" if my thoughts still reach only the uninterested few. "Men destroy themselves with their reason and their thoughts reveal them," and I fully realize that with an unlimited supply of argument one can easily persuade himself that he possesses the proper thought on most anything; but it is easily seen from the history of the past century that organization, on a proper basis cannot help but succeed.

Notions of a form of proof, by which conclusions can be absolutely demonstrated by dint of pure logic alone, are delusions; but knowledge of any form must take risks in order to progress. There is always the risk of choosing the wrong solution of a problem, but the taking of risks is inevitable—it is life, and we cannot escape it, either by refusing to inquire, or by refusing to decide, for in either case we run a greater risk of keeping in a rut. Science started before Aristotle, but failed to progress for over two thousand years after, because it could not support itself; it was not organized. Our strength today in medicine rests more on mere numbers than cooperation and it is about time we break decisively with logical tradition and conceive our own destiny. We possess the scientific capital, which we risk in research and sacrifice for the benefit of mankind; but our motives must be placed openly before the public in order that they understand our efforts to be purely for the advancement of higher biology.

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*The Outline of History—H. G. Wells, Vol. 1.

To do away with the mistreatment of its scholars, for which the world is famous, a new defense for their sacrifices must be developed. The material prosperity of a nation is of secondary importance to its scientific development, and the price of one battleship for the study of the streptococcus is an exchange, the value of which is beyond our "great statesmen" in Washington today. As long as the public leaves huge endowments to the promulgation of dead languages and dying literature, the outlook for medical sciences is as it has been—always one step behind the last in the procession. Therefore medicine even more than all other vocations must take care of itself; but what is medicine,—speaking of misnamed entities? We might join this "sacrifice of unorganized scholarship" (present day medicine) to the ignominy of capital and unionism, in the guise of our benefactors, but we must then expect the climax of dissolution of the medical profession as an artful, scientific and benevolent body. Tomorrow we may be working for organized insurance companies, because their power and money may push through any state legislature, whose members understand a dollar bill better than the streptococcus. The best of medical men have not pursued their scholarly attainments primarily for money, and it is sincerely hoped that they never shall be forced to; but with the rising tide of organization everywhere it behooves us to take stock of our standing and choose between commercial and scientific medicine. Our present individualism resembles too much the literary specialist,—"who is constantly drawn toward literature (individualism) by his boyhood love, constantly repelled toward scientific methods by his university environment, having settled down into an aimless, amphibious existence, paddling a little in the shallows of lyricism and scratching out a few memoirs around the rotting stump of some old master."

We must get away from the domination of American thought by German scholarship because the individualism it developed is out of place today—it lacks cooperation. Individual effort of the future needs this cooperation owing to the tremendous amount of experimental work rapidly accumulating, which no one man can assimilate on an utilitarian basis. Medicine nowadays more than ever must battle with commercialism, requiring power for self protection, which can only come from scientific attainments on a more organized basis together with proper political protection and financial assistance for institutional study. To exemplify let us inquire why our defects are first pointed out to us by the public and our unworthy are first prosecuted by the courts and dropped by general society before we awaken. If our activities toward ourselves, as a medical body, are so sluggish, what must our rate of accomplishment be toward society in general? If we are here just for our individual selves let us admit that we are commercializing medicine; if for society in general and the advancement of higher biology then let us elevate medicine by systematic organization.

The two greatest obstacles to the progress of medicine are (1) the lack of organization in medicine and (2) the layman's lack of knowledge of the value of medicine to himself. We still have too many classes of Class A institutions. To turn out medical men of a more uniform type in training and thought, we should have one standard type of schooling, requiring one standard of preliminary education, with a definite number of departments, correlated in a certain way only and one standard type of text book. There is no reason why medicine should not be taught as well and exactly the same in an eastern as in a western state, providing they have the equipment. When our medical student leaves a school in Connecticutt his courses should have corresponded in the minutest detail with the student leaving a school in California. When he chooses a hospital he should know from a common standardization of all hospitals just what sort of an institution he is entering. When he leaves his interneship, we will know his schooling and can judge his training by the standardization of the hospital and not by the location. All hospitals should be standardized on their bed capacity, requiring a definite equipment, one standardized set of records and only one method of keeping these records. The Ford automobile factory and all its agencies is a good example. It will then be unnecessary to send forth blindfolded committees of inspection, who have so many different methods presented to them that they can only hope to return in helpless confusion. If hospitals were required to send yearly, a copy of such standard records to a central hospital bureau, after being certified before a notary, we would have far more institutions working on deeds instead of promises. Such standards pursued systematically will teach the student the value of proper organization, which he will be quite likely to carry with him in after years. To date he has seen practically nothing of medical organization, leaving him with a tendency toward entering his practice with no aims or standards nor persistency along any lines.

Relative to the second great obstacle to the progress of medicine; viz, the lack of knowledge on the layman's part of the value of medicine to himself, we cannot blame him directly for that. Any student of economics today acknowledges that the basis of civilization is science, and that civilization has advanced through the past ages on philosophy, religion and science, the last being the least indispensable. However, the layman has this just reversed, for being taught so for two thousand years. He cannot see the woods for the trees in medicine and only becomes interested when he is forced, through faith instead of knowledge, to consult an individual unit (physician), while he (the layman) is mentally and physically unfit. He always will look upon medicine in this manner until he is taught by the profession as a whole, the value of biology in all branches and then perhaps he will make an attempt to help raise the standard of man to equal his efforts toward raising his standard of cattle. We have through tradition carried down a misnomer, "Doctor of Medicine", meaning to the average layman, a pill peddler, or a species of nurse. We might long ago have changed our degrees to signify students of biology and the term doctor could then be aptly applied to the various parasitic cults, who have polluted the title by branding themselves as such. We have so neglected this honorable insignia that most anyone can adopt it if it will increase his financial standing; a new sign I recently saw in Omaha read "Doctor of Tonsorialism".

We have held on to the same methods practiced by the ancient Greeks and our hygiene does not excel the hygiene first developed by the historic Hebrews, one thousand years before the Christian era. As the knowledge of medicine has advanced specialties have sprung up, until today they are so numerous that they have become antagonistic to one another. Naturally this constant combat does not increase the layman's respect and confidence, as he cannot help but believe each specialty, when he is informed by one, that all others are inefficient; mere prototypes of the examples set by various religions. This very antagonism indicates that each one is faulty which would quickly be eradicated by organized medicine, developing a real fraternity based upon solidarity.

The profession as a whole to date has displayed no definite aims, methods or persistency toward any certain goal. We weakly endeavor to organize for more efficiency among ourselves, which only narrows our field of vision and increases our competition and tense feeling toward one another. We need something to broaden our vision to the extent that we can stop wasting our efforts toward throwing obstructions in each other's way. We could then relax, knowing our solidarity, gaze more broadmindedly upon the outside world and be of more material benefit. We might be considered then as a vocation of general biological influence, instead of one exhibiting the finest examples of misplaced energy.

The strength of any nation depends upon its health, but there is no chair for the man of biology in the president's cabinet at Washington, the actual economic value of which, even these men of high intelligence are unable to appreciate. The highest position in this cabinet might well be a secretary of biology, followed by the secretary of agriculture and represented only by men long trained in these scientific lines. A national bureau of health with subdivisions in each state under one standard, is the greatest need of this nation today. Every state medical society, with one national standard, should be closely united under a national medical cabinet of the American Medical Association and we should have one standard examination to permit practicing anywhere under the American flag. We would then have two organizations instead of a hundred, meeting more effectively and exchanging their ideas for the benefit of all concerned.

There is no reason why the Nebraska State Medical Association cannot organize first and set an example. We could unite our state society in Nebraska around a president, elected for two years and no younger than forty-five years of age in order to have one of mature judgment, and supported by a board of councillors, one from each district, elected for a term of five years in order to become proficient in this work; and one term for everybody, to do away with playing politics for another! Our annual meetings might then develop more scientific notoriety instead of newspaper. Owing to the unfortunate necessity of defending ourselves from outside aggression and of regulating the methods of practice of some of our members, we would need also in this medical cabinet, a student of legal affairs with a salary of such dimensions that ability would not be wanting. This student should have no other vocation than that of legal advisor to and proper political promotor of the profession of the state of Nebraska.

This cabinet should compose the state examining and licensing board and should issue and nullify all licenses to practice. It should also compose the board of health, in order to get better cooperation from the public through the profession. All hospitals should be required to obtain a permit to operate from this cabinet and should be standardized and inspected by it yearly. Owing to the good and bad influence of politics one very important duty would be to instruct legislators properly and fairly. Politics are here to stay and enter every phase of life, but rarely on a scientific basis; hence the need of political protection and influence for the profession. Harvard University has only recently put in a chair of politics, realizing its importance and permanency.

The state medical journal, in order to keep it free from partiality and personal advancement, should be under the jurisdiction of this body, should have a business and editorial manager and a board of six or more editors of ample qualifications, all appointed by the cabinet. These editors should write articles also for the lay press, signed only by the "State Medical Association"; giving instructions to its readers, of such nature that their knowledge and respect for medicine shall rapidly advance. In that way they can instruct the layman how to judge medical men and can maintain a bureau of information for his inspection concerning every medical man and hospital in the state. They would soon learn to use this bureau after proper information in the public press. As it is when a man has five hundred dollars to invest, he very carefully investigates the security, but when he decides to have his gall bladder taken out he dives in backwards. This bureau would be a clearing house between the layman, the hospitals and the profession; a light never before seen and when once started could never be extinguished.

It would take a few years to accomplish such a reorganization and even more time to obtain the cooperation of the legislature; and the worst that could happen to such an effort would be far better than the present inert condition of our state society. An organized state society around an impartial and fearless cabinet, backed by the medical and public press, can do more than unite the profession; it can introduce medicine (biology) to the public. There is not one practicing physician in Nebraska who could not afford to pay twenty-five dollars a year for such benefit and protection, because there is not one physician in Nebraska who could afford to be outside such a reorganized association.

If the medical profession of Nebraska is to prove itself worthy of the sacrifices which its past members have made without due recognition, if it is to realize the grave potentialities of its situation relative to society in general, its members must individually develop a deeper sense of responsibility, calling to the direction of its affairs, a far higher type of administrative capacity than it has been content with in the past.

Perhaps my philosophy has appeared too pessimistic, but I would much prefer it such, in place of being obstinately optimistic.

The Anatomic and Dynamic Principles Involved in Prolapsus Uteri.*

O. D. Johnson, M. D., Kearney.

Before taking up the discussion of the anatomic principles involved in prolapsus uteri, it would be well to define the term. "Prolapsus uteri may be defined as a downward and backward displacement of the entire displacable portion of the pelvic floor, uterus, and appendages, past the entire fixed

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*Read before the Republican Valley Medical Society, Oct. 28, 1920.

portion, with coincident descent of the small intestine. It is in reality a hernial displacement of part of the pelvic floor, in which the entire displacable segment of the above, with the uterus and appendages is driven down by intra-abdominal pressure—the force of gravity, etc., and is anaeagous to what we term a surgical hernia.

Thus it has (1) a sac, the peritoneum; (2) a definite road to travel along, whose boundries are (A) in front; the symphysis pubis, (B) behind; that portion of the pelvic floor from the anterior wall of the rectum back to the sacrum, (C) side walls; viz., obturator internus and levator ani muscles; (3) definite coverings, viz., (A) pubic segment of the pelvic floor, the uterus and the posterior vaginal walls. (1).

In the evolution of any structure or group of structures one is impressed with the constancy of a law which is, broadly expressed, that morphology always follows function, or the anatomy of a part alters to suit the changed physiology with such modifications as are necessary to fit each process to properly interact with the other structures comprising the entire animal. If this law be applied to the subject under discussion, it would be apparent that in the development of the present type human being, two great functions of the lower animal form have been widely changed (1) the assumption of the upright position on the part of man, and (2) the enormous increase in intellectual power, necessitating a change in the form of head to contain the expanded brain. In the pelvis there must have taken place such changes as would permit the trunk to be carried erect, and such modifications of the contour as would allow the passage of the enlarged cranium of the child. The second law becoming operative will explain the seemingly imperfect evolution to suit the changed conditions as due to some related necessity for the fulfillment of an independent function of the pelvic girdle.

In the main the functions of the pelvis are five in number; (1) to attach the legs or hinder limbs to the trunk; (2) to furnish points of attachment and fulcra for the great muscles, which, in man, hold the trunk erect; (3) to provide egress and support for the terminal canals of the intestinal and urinary system; (4) provide for a birth passage; (5) to act as a shelf and support of the abdominal viscera.

The development of the human pelvis was also influenced by another fundamental law of evolution—that of natural selection. It is apparent that the earliest females of the species were or were not able to give birth to young according as their pelvis had widened or not, and those who were unable to bear either remained sterile or died in labor, with the result that all breeding was carried on by females with wide pelves. Such a course would, by the above mentioned process, predispose to the production of the female type with a broad pelvis, and probably a more lax pelvic floor. The ultimate result of the changes in force brought about by the assumption of the upright position is as follows: (1) to develop a forward inclination of the sacrum and a concavity in its surface anteriorly; (2) to greatly increase the iliosciatic angles; 3) to cause the acetabula to move forward of the lumbo sacral axis; (4) to shorten the bodies of the ilia and develop in them a regular curved surface, its concavity facing forward and inward; (5) to decrease the interpubic angle and accordingly to remove the triangular quality of the pelvic contour; (6) to increase the transverse diameter of the antero-posterior portions; and (7) to greatly decrease the sacrosymphysial angle, with the result that the entire pelvis cavity lies in one plane.

Now, on removing the peritoneum from the pelvis, the pelvic fascia which lies beneath it is at once exposed; the pelvic fascia is continuous above with the transversalis in front, the iliac fascia laterally, and the anterior layer of the lumbar fascia behind. Its extreme anterior portion forms the true ligament of the bladder which binds the bladder and the urethra firmly to the posterior surface of the os pubis. Laterally the fascia is attached to the brim of the true pelvis, and then sweeps downward and inward to the bladder, vagina, and rectum. This fascia seems to be divided into two distinct parts; one anterior and the other posterior to the broad ligaments. The portion anterior to the broad ligaments seems to be much stronger than the portion posterior. Its antero-posterior axis is parallel to that of the superior strait. From its attachment at the brim of the pelvis this portion of the fascia sweeps downward to the bladder with which it is intimately connected, and to the vagina which it splits to enclose, uniting about it with the fascia from the opposite side, and being attached to the cervix uteri, where it helps to form the vaginal vault.

This forms a strong fibrous sling, which to my mind, is the main support to the vagina, and the strongest of the uterine supports. To the anterior part of this fascia, the name true lateral ligaments of the bladder, is given by anatomists. The median portion of this fascia extending from the cervix to the symphysis pubis has been called the pubo-vesico-uterine ligament by Hyrtl (a). However, in reality, the whole fascia is concerned in the support of the pelvic viscera and division into ligaments is artificial and arbitrary.

At the dividing line between its anterior and posterior parts, the pelvic fascia is reinforced by a thick, somewhat fan-shaped, band of fibres in which runs the uterine artery, this has received the name of the cardinal ligament of the uterus (Kochs) (b), and transverse ligament of the uterus (Mackenrodh) (cx), and is referred to by Dudley and Reynolds (d) (e) as the fibrous base of the broad ligaments. In point of fact it is part of the pelvic fascia, and not of the broad ligament, from which it differs in structure and continuity, although it is located at the point of attachment of the broad ligament to the pelvic fascia. The anterior portion of the pelvic fascia is intimately connected with the bladder and vagina, from which it can be separated with difficulty.

The uterus and bladder, while firmly attached to the pelvic fascia, can be easily separated from each other, being connected to each other by a large number of small bands running in an antero-posterior direction between the two organs.

Posterior to the broad ligaments the pelvic fascia is thinner and dips more deeply into the pelvis, the whole posterior portion of the pelvis being deeper than the anterior, and passes downward and inward to the rectal wall to which it is firmly attached; posteriorly it covers the pyriformis and is continuous with the lumbar fascia.

From the under surface of the pelvic fascia is given off the obturator fascia, which covers the obturator internus muscle, and the line along which this fascia separates from the pelvic fascia is much thinner than the fascia elsewhere, forming the "white line," which extends from the posterior surface of the os pubis in front to the spine of the ischium behind, and gives origin to the levator ani muscle. In all text books of anatomy the pelvic fascia internal to the "white line" is called the recto-vesical fascia. This is misleading in the female and should be called the pelvic fascia.

The utero sacral ligaments lie superficial to the pelvic fascia. They are rather loosely connected behind to the second and third sacral vertebrae, and anteriorly are inserted into the cervix uteri at the level of the internal os; they consist of a flat band of smooth muscle fibers, and some connective tissue, covered by a fold of peritoneum. Normally they are about 2.5 cm in length (Stone) (b). There is great difference of opinion regarding the function of the utero-sacral ligaments, as to whether they actually support the uterus or simply act as guy ropes to hold the cervix backward. The chief agreement in favor of the utero sacral ligament as a support of the uterus is that the first steps in prolapse is the dropping downward and forward of the cervix, together with the fact that these ligaments are found to be greatly weakened in prolapse. The arguments against, are the small size and comparative weakness of the utero-sacrals. However, it seems probable that these ligaments do have a part in holding up the uterus in that they lie at a higher level than the posterior portion of the pelvic fascia, and perhaps form the posterior continuation of the sling formed anteriorly by the pelvic fascia.

Of the function of the broad and round ligaments it is unnecessary to speak, since they have been generally eliminated from consideration as supports of the uterus.

The levator ani muscle has been divided into parts by Savage (g): (1) Pubo-coccygeus; (2) Obturator-coccygeus. The first of these arises from the posterior surface of the os pubis and passes backward above the vagina and rectum on either side to be inserted into the tip of the coccyx and the perineum. It is this portion of the muscle that may be felt in the living subject, on either side of the vagina, about one inch inside the introitis and which is often lacerated in labor, resulting in rectocele. The second of these, the obturator coccygeus, arises from the white line and is inserted into the sides of the coccyx, merely serving to fill the gap between the ischium and the coccyx posteriorly.

The small muscles of the perineum, transversus perinei and bulbo cavernosi have more to do with the sphincteric action than pelvic support. The triangular ligament which lies on the deep surface, stretching across the pelvic outlet, helps to close the lower portion of the vagina by which it is perforated.

The perineal body, which forms that part of the perineum lacerated in so-called external tears, is composed of fibrous tissue which receives the insertion of the transversus perinei, the bulbo cavernosi, the external sphincter ani, and some fibers of the levator ani. It forms the lower posterior wall.

From close observation of a large number of patients suffering from lacerations and loss of support, incident to injuries received at parturition, certain well-substantiated facts are apparent. The first of these is that the perineum and levator ani have little to do with support of the uterus. This conclusion follows upon the observation, that the uterus lies at a distinctly higher plane in the pelvis than the perineum and levator ani. It is borne out by these facts; first, that prolapse and procedentia may occur in women with unlacerated perineum and levator ani, and even, though rarely, in virgins. Second, by temporary prolapse which not infrequently follows upon delivery, often without perineal tear; and finally, that large rectoceles and complete perineal tears may exist without prolapse of the uterus and bladder.

That the external perineum has little to do with the support of the rectum and posterior vaginal wall is shown by the fact that complete tears are not necessarily accompanied by rectocele. On the other hand, rectocele is always associated with injury of the levator ani. Therefore, the levator ani seems to be the support of the rectum and posterior vaginal wall. Rectocele may occur even though the external perineum remains intact if the levator is injured.

The support of the uterus and bladder is intimately related as is shown by the fact that prolapse of the uterus is always associated with prolapse of the bladder, although cystoceles of moderate size may occur from stretching of that part of the fascia forming the anterior vaginal wall without prolapse of the uterus. The mechanism described by Hart is as follows: First, there is a prolapse of the anterior vaginal wall accompanied by a dropping downward and forward of the cervix. As the process goes on the cystocele increases and the cervix drops lower, the fundus becoming secondarily retroverted. Finally, the anterior vaginal wall appears outside the vulva, followed by the cervix, and finally by the upper part of the posterior vaginal wall.

This mechanism is best observed in an early case, for later, the general laxity of the parts allows the uterus to retrovert into the hollow of the sacrum from force of gravity, which has been incorrectly assumed by many writers to be the initial stage of prolapse. In the normal nullipera the cervix is fixed at a point high in the pelvis, the corpus being more or less freely movable upon the supravaginal cervix as a pivot. Now when prolapse occurs we find that the cervix is no longer relatively fixed, but on the contrary, is equally movable with the corpus.

From this array of clinical facts, two definite conclusions may be drawn:

(1) That the support of the supports of the uterus and bladder are closely associated or identical.

(2) That the uterus receives its support at the level of the supra-vaginal cervix.

New and Nonofficial Remedies.

Acine Bacterin Mixed No. 10—Beebe.—A mixed bacterial vaccine (see New and Nonofficial Remedies, 1920, p. 295) marketed in packages of six 1 Cc. vials, each Cc. containing 500 million killed B. acni vulgaris, 1,000 million killed staphylococci albi and 500 million killed staphylococci aurei suspended in physiological solution of sodium chloride; also marketed in 10 Cc. vials and in 20 Cc. vials. Beebe Laboratories, Inc., St. Paul, Minn.

Adalin Tablets 5 grains.—Each tablet contains 5 grains of adalin (see New and Nonofficial Remedies, 1920, p. 63). Winthrop Chemical Co., New York.

Veronal Sodium Tablets 5 grains.—Each tablet contains 5 grains of veronal sodium (see New and Nonofficial Remedies, 1920, p. 84). Winthrop Chemical Co., New York.

Novaspirin Tablets 5 grains.—Each tablet contains 5 grains of novaspirin (see New and Nonofficial Remedies, 1920, p. 248). Winthrop Chemical Co. (Jour. A. M. A., Jan. 15, 1920, p. 179.)

Phenetsal.—Salophen.—The salicylic acid ester of acetaminophenol. The actions of phenetsal resemble those of phenyl salicylate (salol). It acts as an antirheumatic, antipyretic, antiseptic and analgestic. Phenetsal is white, odorless and tastless. It is almost insoluble in water.

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The Proposed Marriage Law.

A bill has again been introduced in the Legislature, which if it becomes a law, will require both parties contemplating marriage to submit to an examination, and obtain a certificate of freedom from venereal disease before a license will be granted. This bill, as usual, is causing a great deal of discussion in the medical profession and most of it seems to be unfavorable to the bill.

However, the reason behind this bill is one that cannot be ignored or put down without at least something being done, sooner or later. This reason is: that, due to the educational campaign that has been carried on; the laity has become pretty well informed of the prevalence of venereal disease. It has also learned how these diseases are contracted and passed on, and the results caused by them. Consequently, there is a demand that something be done and this demand is getting stronger all the time.

The opposition to this law seems to fall into two general classes. One is: that it is an infringement on personal rights. This argument will hardly stand up at this time. Our courts have repeatedly held that personal freedom does not go to the point where it may do harm to others.

The other argument against the proposed law is more sound. It is concerned with the examinations themselves. First, we hear that the fee allowed by the law will be so small that the doctor cannot give the time necessary to do a good job. Also, it is said that many doctors are not qualified to do this work because they are not equipped to do laboratory work. Added to this, comes the statement that a series of examinations are necessary, some of them very probably following provocative tests, and even after this routine, we cannot be sure that the individual is free from venereal disease. These arguments are all sound and if this was all there was to the question, they would be enough to settle the matter.

However, there is another side to the question. First, our State is keeping track of all reported venereal cases and to a certain extent, this is helping to satisfy the demand that something be done. It also keeps the individual under control during treatment. There is one State which has a marriage examination law and reports that the law is working much better than expected. Then recently, comes a court decision giving a wife heavy damages because her husband had given her a venereal disease. This decision not only shows that a wife is no longer her husband's property, but also deflects public opinion on the subject.

Now it seems to the writer that facing the fact that there is a condition here which demands that something, this proposed law along with the above court decision and public sentiment, will at least cause the individual to exercise extreme care before he or she marries. The real virtue of this law will be that it will be a stimulus to prevention.

— R. B. A.

The Cause of the Soldier.

At the close of the World War the American people made the most generous provision for its soldiers. Public opinion spoke with authority to its servants at Washington and commanded them to provide the highest medical and surgical skill for the sick and wounded. They wished to reeducate the crippled and fit them for any calling they might choose and to give financial aid when necessary. Service was primary; cost, secondary. The soldiers should remember that the attitude of the people has constantly been one of grateful appreciation and today they are constantly expressing annoyance and disapproval at the soldiers' treatment. They keep asking, Why this situation? Whose fault is it? How can it be remedied?

The whole fault lays with the machinery put in operation to carry out these three objects. One board was organized to take care of the sick soldiers, another bureau was to look after the vocational training and a third was to see to financial aid. Three committees to attend to three jobs—sounds simple, does it not? Just a moment till a soldier states his case to the Surgeon General and asks information as to which board to apply to in his case and hear him say, "I don't know; it is not clear in my mind just who you belong to". By the time these boards got organized, they had so much red tape wrapped around them that so far as the soldiers were concerned, they were useless. It took so much time to transfer from one board to another and so much uncertainty as to whether they would be accepted by one or the other of these boards that the men lost contact.

There is no use denying the fact that the soldiers are thoroughly disgusted with their treatment. So far as efficiency is concerned, the Government is a failure. The Government can find them when it needs them, force them into a uniform and send them three thousand miles across the sea to get shot up; but when they are brought home sick, wounded, dying, it cannot see them.

The result is that today there are thousands of ex-soldiers wandering aimlessly over the country in need of hospital care. Many are in county jails and almshouses, bitter, hopeless. True, not all these cases are the fault of the Government but most of them are. What is the remedy? What shall be done?

First—Let the American people shout loud, long and vigorously that they think it is a crime, an outrage and that they won't stand for it any longer.

Second—When you needed the services of that boy, every town and county was card indexed—you had the name and address of every boy. A committee of solid citizens constituted a board to consider his case. Now that the case is reversed, reorganize that same board and let the boy in your town or county come to you and state his case. It is idle to expect that boy to get in touch with any board in Washington. You might just as well tell him to write to the King of Siam.

The American Legion has an active committee at work in Washington and if any reader of these lines has any interest whatever in seeing fair play for the soldiers, he could help a great deal by writing to our senators and representatives and calling their attention to this outrageous condition.

— E. C. H.

The Sheppard-Towner Bill.

The Sheppard-Towner Bill "for the public protection of maternity and infancy" passed the Senate in December and will doubtless pass the House. The bill as passed in the Senate fixes the sum to be proportionately divided annually at one million dollars, instead of four million as provided in the original bill. The conditions upon which these funds will be available to the states are that the states are to provide equal sums out of the state treasuries and that these combined funds shall be used in the education of the public in maternal and infant hygiene, and for providing medical and nursing care for maternity cases.

Should Nebraska avail herself of the grants under this bill she would have annually about $44,000 — $10,000 for educational purposes and about $34,000 for medical and nursing care of maternity cases. If such medical and nursing care can be provided as cheaply as by the Bureau of Child Welfare in New York City, $7.00 per case, and we are sure it can be, the fund will reach over four thousand cases.

The need for such work as is provided for by this bill was established beyond question before the Senate Committee on Public Health, etc., by a most distinguished and dependable body of social workers, men and women with long experience in social welfare work along many lines. The humiliating fact was established beyond question, that our infantile death rate is far greater than that of most civilized countries and that our provisions for infant and maternal welfare, fall far short of those provided in most other countries comparable with ours economically and from the standpoint of education.

As showing the effectiveness of work such as is outlined in the bill may be instanced the report of the Henry Street Settlement (founded by Lillian Wald). In this community a few years before, the infant mortality had been 1 in 28 and the maternal, 1 in 100 to 150. In 1919 the settlement gave home care to 4683 maternity cases with an infant mortality of 1 in 102, and no maternal deaths, a remarkable showing.

Various objections were urged against the bill, socialism, paternalism, expense, and that the sum provided for in the bill would not be a drop in the bucket. Temporarily a drop in the bucket might be better than nothing. Let us take care of the 150,000 maternity cases if we cannot care for the 1,500,000. In the interests of civilization, certainly some of the millions spent for various other purposes might well be diverted to subserve the welfare of human mothers and infants.

The fundamental and valid objection to this bill, not even broached at the hearing, is that it is remedial, not curative, in its nature, and can claim support only as an emergency measure. The bill is a tacit confession of that vast social wretchedness which exists in this land of youth and plenty and unrighteous distribution, growing out of industrial injustice, commercial exploitation, social environments favoring illicit sex relationships, practically unrestricted marriage resulting in large families born to the defective and delinquent, a medical practice founded upon commercial competition the benefits of which cannot be enjoyed by a large proportion of our people, etc.

Clearly the course of wisdom is to legislate with the end in view of making conditions such that those unfit shall become neither fathers nor mothers; that no children shall be born, who, in the interests of their own happiness and of social welfare, ought not to be born; that economic conditions shall be such that any father can himself take proper care of wife and a limited number of children, not less than two.

The challenge to us of the medical profession is, that while standing back of all helpful legislation, such as this measure, we concentrate our effort upon that which is curative, that which grubs out the roots of these social evils; and especially that we initiate and further such legislation as our special knowledge and training enables us to appraise, as the laity cannot. The furtherance of such curative measures as birth control, castration of delinquents and defectives, eugenic marriage laws, etc., constitute our special field of political duty.

I. C. P.

What Shall We Do To Be Saved?

A very acute situation has developed in the field of nursing. Training schools are advertising in the medical and lay press for young women probationers, and personal appeals are being made through letters to members of the medical profession for assistance in getting applicants for training.

Twelve to fifteen years ago every community furnished a number of young women for the training schools annually; today the same communities have few or none who care to take training.

One reason for this is the long course of training. Young women can take a six or nine months' business course and take hundred dollar positions with shorter hours.

Many medical men believe that the course of training is unnecessarily long. Nurses are not expected to take the place of doctors. No one can be overtrained (know too much) but as the handmaid of the physician and surgeon nurses should take their places very ably after two years of training. Isolated communities are suffering for want of trained nurses, and training schools are suffering for want of young women to take the long course of training, because of a system of super-training for which there certainly is no crying need at this time.

May we not hope that the leading spirits of the nursing world will come down from the clouds and provide a course of training that will meet the actual needs of the people?

The Annual Convention

The Annual Convention of the State Association will be held in Lincoln, May 9-12 inclusive. This meeting should see the State Association at the strongest period of its history. The membership is the largest that it has ever been. We are far enough past our war adjustment period for the effect of it to be over. To be sure, we are in a period of business depression making for hard times, but it is to be hoped, and most good business men seem to think, that conditions will be much better by then. If this is true, the 1921 meeting should be the biggest one on record. The state committee and the local committee on program and arrangement are bending every effort to make this the biggest meeting.

As you will have noticed above, the Convention will last one day longer than in previous years. Due to the growth of the Association, the two day program of previous years was considered too short and the extra day was added in order to allow for a longer Scientific Program.

This Program, which is being prepared by the Committee will be the best that can be arranged, and it will be given in such a manner, that no one need miss any part of it if they do not desire to do so.

R. B. ADAMS, Sec-Treas.

The Journal A. M. A. Reviews Us.

In its very excellent review of current medical literature, the Journal of the American Medical Association, has rarely if ever seen fit to notice the original articles in the Nebraska State Medical Journal; but in its issue of January 22, the articles of Dr. J. E. Summers on Postoperative Gastric and Intestinal Hemorrhage, and Dr. M. G. Wohl on Sporotrichosis, in the December Nebraska Journal, are reviewed at some length. The Nebraska Journal appreciates the implied compliment.

Membership Renewals.

Payments of Membership dues for 1921 have been very encouraging so far. To date, February 11, there are 905 paid up, which is 192 more than for the corresponding time last year. Considering that the dues are one dollar higher than previous years this is a very remarkable showing. Attention is again called to the new by-law which in effect says that if dues are not received by January 31st, subscription to the Journal expires.

Call For Papers.

The next annual meeting is just two months in the future, and as yet there are still places left on the scientific program. This call is put in especially for the benefit of doctors out in the state. Titles of all papers should be submitted not later than March 15th, and as this will be of necessity the last call through the Journal, please get the titles in immediately.

R. B. ADAMS, Sec-Treas.

Our New Advertisers.

The Journal wishes to call the readers' attention to the new advertisers in this issue as follows: Bolen Mfg. Co., The Mutual Savings and Loan Association of Omaha, Mayer Bros., Chicago Policlinic and the Washington University. We trust the members will patronize the advertisers in their own Journal.

Report of a Case of Jejunal Ulcer and Abscess.

B. R. McGrath, M. D., Grand Island.

The comparative infrequency of jejunal ulcer should be sufficient reason for reporting cases of this condition even though they present no unusual features.

The following case is of more than ordinary interest in that it shows two complications following gastro-enterostomy and apparently shows the permanent suture caught in the act of producing both.

L. S., age 26, male, white. Occupation: Farming. Was taken sick with stomach trouble May 1918. Treated medically in a military hospital for several months with some relief of symptoms and a gain of 12 pounds in weight.

After discharge from the army, symptoms became worse and a surgeon was consulted. July 2, 1919 the patient had a cholecystectomy and a gastro-enterostomy done. Following this operation, there was no relief of symptoms.

January 20, 1920, he came to us complaining of pain in the epigastrium, beginning one to two hours after meals and in the latter part of the night. Pain relieved by taking food and by soda. Patient stated that he vomited bile a great deal and had tarry stools at times.

Stomach Contents: After test meal. Total quantity 150 cc. Total acidity 36. Free HCI 4. Food remnants, yeast cells. Boaz-Oppler bacilli none. Lactic acid present. Blood present. Bile present.

X-ray report by Dr. R. C. Woodruff was as follows:

Patent gastro-enterostomy opening in dependent portion of pars media. Most of meal passes through pylorus. Stomach hypertonic with very active irregular peristalsis. No filling defect noted. Stomach is fairly movable, but is tender to manipulation. Duodenal cap fills completely. No evidence of defect or spasm. Duodenal contents retarded at gastro-enterostomy opening. No six-hour residue. X-ray diagnosis: Irritable stomach probably from extragastric causes. Patent gastro-enterostomy opening with slight function.

Laparotomy was done January 22. Dense adhesions were encountered about the stump of the amputated gall bladder and about the gastro-jejunostomy. About 2cm. below the opening a tumor could be felt in the jejunal wall. Careful search over the exposed portions of the pylorus and duodenum failed to reveal any sign of an ulcer, active or healed.

The stomach and jejunum were separated. Just below the line of attachment of the gastro-jejunostomy a small mucous ulcer was seen. About 4cm. from this ulcer, pus was seen exuding from a small opening in the mucous membrane. A sinus could be traced from this opening a distance of about 3cm. to a mass the size of a hickory nut in the jejunal wall.

Black linen sutures were found in the line of union of the gastro-enterostomy. When the abscess in the jejunal wall was opened the end of one of these stitches was found hanging within the abscess cavity.

The lesions were distinct and separate from each other. Both were overlying linen sutures and apparently caused by irritation of the permanent material.

September 28, 1920 the patient reported that he was practically free from stomach symptoms.

Nebraska Section—Clinical Congress of American College of Surgeons.

Clinical Program for March 3rd

ST. JOSEPH HOSPITAL:

Dr. L. B. Bushman from 9-10. Subject: Eye, Ear and Nose Operation.

Dr. Karl Connell from 10-12, Subject, General Surgery.

METHODIST HOSPITAL:

Dr. A. F. Jonas from 8-10. Subject: Surgery of the Stomach. (North Amphitheatre).

Dr. C. C. Morrison from 10-12. Subject: Operative Fractures. (North Amphitheatre).

Drs. J. M. Patton and H. Gifford from 8-12. Subject: Focal Infection in Relation to the Eyes. (West Operating Room.)

CLARKSON HOSPITAL:

Dr. J. E. Summers from 8-11. Subject: General Surgery.

IMMANUEL HOSPITAL:

Dr. F. S. Owen from 8-10. Subject: Eye and Ear Operation.

Dr. C. A. Hull from 10-12. Subject: General Surgery.

FENGER HOSPITAL:

Dr. Palmer Findley from 8-11. Subject: Gonorrhea in women.

Dr. Wherry from 11-12. Subject: Nose and Throat Operation.

SWEDISH MISSION HOSPITAL:

Dr. A. J. Brown from 8-11. Subject: Tubercular Cold Abscess of the Back.

Demonstration of the Callot Method of Aspiration and Injection.

Dr. H. P. Hamilton from 11-12. Subject: Surgical Technique.

Dr. Delmar Davis from 8-11. Subject: Inguinal Hernia by Local Anesthesia.

WISE MEMORIAL HOSPITAL:

Dr. C. A. Roeder from 8-11. Subject: Goiter, Gastric and Duodenal Ulcer and Prolapse of the Uterus.

Dr. J. M. Banister from 11-12. Subject: Operative Treatment of Comitant and Paralytic Strabismus.

UNIVERSITY HOSPITAL:

Drs. B. B. Davis, C. O. Rich and C. R. Kennedy from 8-10. Subject: General Surgery. (Amphitheatre).

Dr. J. Lord from 10-11. Subject: Orthopedics. (Amphitheatre).

Dr. Edwin Davis from 11-12. Subject: Urology. (Amphitheatre).

Dr. A. C. Stokes from 10-12. Subject: Discussion of Osteomyelitis and Bone Pathology. (North Operating Room).

Clinical Program for March 4th

PRESBYTERIAN HOSPITAL:

Dr. Karl Connell from 9-11. Subject: Demonstration of Anesthetic Apparatus.

METHODIST HOSPITAL:

Dr. J. P. Lord from 8-10. Subject: Orthopedic Surgery and Bone Grafts. (North Amphitheatre).

Dr. C. R. Kennedy from 10-12. Subject: Urological Surgery.

Drs. J. M. Patton and H. Gifford from 8-10. Subject: Acute Surgery of the Eye. (West Operating Room).

Dr. D. A. Foote, from 10-12. Subject: Homeopathic Surgery. (West Operating Room).

CLARKSON HOSPITAL:

Dr. C. E. Rich from 8-10:30. Subject: General Surgery.

Dr. J. P. Lord from 10:30-12. Subject: Orthopedic Surgery.

IMMANUEL HOSPITAL:

Dr. F. S. Owen from 8-10. Subject: Eye and Ear.

Dr. B. B. Davis from 10-12. Subject: General Surgery.

FENGER HOSPITAL:

Dr. Palmer Findley from 8-11. Subject: Gynecological Operation.

Dr. Wherry from 11-12. Subject: Eye and Ear Operation.

SWEDISH MISSION HOSPITAL:

Dr. Delmar Davis from 8-10. Subject: Laparotomy by Spinal Anesthesia.

Dr. A. J. Brown from 10-12. Subject: Demonstration of Post-Operative Cholecystectomy Cases.

WISE MEMORIAL HOSPITAL:

Dr. A. C. Stokes from 8-11. Subject: Empyema and Brain Tumor.

Dr. J. M. Banister from 11-12. Subject: Radical Treatment of Infected Maxillary Antrum.

UNIVERSITY HOSPITAL:

Dr. A. F. Jonas from 8-11. Subject: General Surgery. (Amphitheatre).

Dr. C. A. Hull from 10-11:30. Subject: Fractures. (Amphitheatre).

Dr. J. E. Summers from 10-11:30. Subject: General Surgery. (North Operating Room).

Dr. D. T. Quigley from 11:30-12:30. Subject: Cancer. (North Operating Room.)

RADIUM HOSPITAL:

Dr. D. T. Quigley from 8-10:30. Subject: Radium and Its Uses in Medicine.

March 3rd, 2 P. M. Symposium on Cancer. Hotel Fontenelle.

1. Pathology and Etiology—Dr. Burton T. Simpson, Buffalo, N. Y. Discussion: Dr. D. C. Hilton, Lincoln, Neb.
2. Tissue Diagnosis—Dr. Wm. C. MacCarty, Rochester, Minn. Discussion: Dr. H. E. Eggers, Omaha, Neb.
3. Radiology—Dr. D. T. Quigley, Omaha, Neb. Discussion: Dr. A. I. MacKinnon, Lincoln, Neb.
4. Carcinoma of the Breast—Dr. B. B. Davis, Omaha, Neb. Discussion: Dr. Harry M. Hepperlen, Beatrice, Neb., and Dr. Wm. C. MacCarty, Rochester, Minn.
5. Carcinoma of the Uterus—Dr. Palmer Findley, Omaha, Neb.

March 4th, 2 P. M. Symposium on Gastric and Duodenal Ulcer.

1. Etiology, Symptoms and Medical Treatment—Dr. Edson L. Bridges, Omaha, Neb. Discussion: Dr. A. R. Mitchell, Lincoln, Neb.
2. X-Ray in Diagnosis—Dr James T. Case, Battle Creek, Mich. Discussion: Dr. Stuart A. Campbell, Norfolk, Neb.
3. Indications for Surgical Treatment—Dr. A. T. Jonas, Omaha, Neb. Discussion: Dr. P. H. Salter, Norfolk, Neb.
4. Operative Treatment—Dr. J. E. Summers, Omaha, Neb. Discussion: Dr. A. C. Stokes, Omaha, Neb.
5. Symptoms and Treatment of Gastro-Jejunal Ulcer—Dr. Delmar Davis, Omaha, Neb. Discussion: Dr. Wm. C. MacCarty, Rochester, Minn.
6. Post-Operative Treatment—Dr. J. Stanley Welch, Lincoln, Neb. Discussion: Dr. Geo. P. Pratt, Omaha, Neb.

The public meeting for the discussion of cancer will be held at the City Auditorium, 8:00 P. M., Thursday, March 3rd, Dr. A. F. Jonas, F. A. C. S., presiding.

Invocation by a prominent clergyman.

Address of Welcome: Mayor Ed P. Smith.

Objects and Aims of the American College of The Campaign Against Cancer: Prof. Francis Carter Wood, Director George Crocker Special Research Fund, Columbia University, New York City.

Western Electrotherapeutic Association.

The third annual meeting of this association will be held at the Little Theatre, Kansas City, Missouri, under the presidency of Dr. B. B. Grover of Colorado Springs, April 21-22. The annual dinner will be given at the City Club on Thursday evening, and a number of distinguished speakers will be present including: Surgeon-General Hugh S. Cumming, Dr. A. J. Pacini, Chief of the X-Ray Department U. S. Public Health Service; Dr. H. Bowing, Mayo clinic; Dr. A. F. Tyler, Omaha; Dr. Wm. Benham Snow, New York City; Dr. Frederick H. Morse, Boston; Dr. Curran Pope, Louisville; Dr. T. Howard Plank, Chicago; Dr. Omar T. Cruikshank, Pittsburg; Dr. Byron Sprague, Pres. American Electrotherapeutic Association and others.

A three days session of the Western School of Electrotherapy will precede the above meeting, beginning April 18th.

Clinics and demonstrations will be held every afternoon. An elaborate commercial exhibit, comprising all the leading manufacturers of apparatus is being arranged, and will prove of great interest to visitors.

For information or program address the secretary Dr. Charles Wood Fassett, 115 East 31st St., Kansas City, Mo.

GENERAL NOTES

The Chiropractic Bill before the legislature has been killed.

Financial difficulties have overtaken the Fenger Hospital, Omaha.

A case of abdominal pregnancy at full term, with operation and survival of mother and child is reported from Macon, Georgia.

The Annual Congress on Medical Education, Insurance, Public Health and Hospitals will be held in Chicago March 7, 8, 9 and 10. Dr. H. M. McClanahan, Omaha, will give the report on Pediatrics. Dr. A. D. Dunn, Omaha, is the official delegate from the state Association.

Local committees for the annual meeting in Lincoln, May 9-12, 1921, have been named as follows: Committee on Arrangements, Drs. R. L. Smith, K. S. J. Hohlen, Geo. W. Covey, T. C. Moyer, Czar C. Johnson, Ruth Warner and M. J. Breuer; Reception Committee, Drs. H. E. Flansburg, A. R Mitchell, Inez C. Philbrick, W. L. Dayton, A. L. Smith, F. F. Teal, W. L. Curtis, H. H. Everett and E. E. Rider.

MEDICAL SOCIETY NOTES

The Gage County Society, Jan. 25th elected the following officers: President, Dr. F. W. Buckley; Secretary-Treasurer, Dr. C. J. Reilly; Dr. C. S. Curry, delegate. A Committee will be appointed to cooperate with civic bodies in all movements in the interest of hygiene, sanitation and other measures for the betterment of the public health.

At a meeting of the Johnson County Medical Society, Jan. 12th, Dr. G. J. Rubelman was elected President; Secretary-Treasurer, Dr. C. J. Snell. Dr. Arthur Smith, Lincoln, read a paper on "Pregnancy and Symptoms of Complications", Dr. H. W. Orr, Lincoln, gave an address on "Fractures and Splints", and Dr. F. L. Wilmeth, Lincoln, gave a paper on "Nephritis."

At a meeting of the Lancaster County Medical Society, Jan. 22nd., Dr. Charles Addison Elliott, Chicago., gave an address on The Basis and Diagnostic Value of Certain Gastrointestinal Manifestations."

At the February meeting of the Richardson County Medical Society at Falls City the program consisted of a symposium on the internal secretions.

The Thayer County Medical Society held its regular quarterly meeting at Hebron, January 6th, with nine members present. Papers were read by Drs. R. F. Decker and P. E. Milbourne. The next meeting will be held at Hebron, April 7th.

ABOUT THE DOCTORS

Dr. R. E. Robinson has located at Ralston.

The Dr. Hall Hospital, Neligh has been reopened in new quarters.

Dr. M. J. Nolan, for a short time at Potter, has moved to Casper, Wyoming.

Dr. J. M. Johnson has taken personal charge of St. John's Hospital, Hartington.

Dr. C. F. Lyle, who located at Gilead, Neb., last summer, has left for a new location.

Dr. D. D. Raber has recovered from a recent alarming illness and has resumed his practice at Tilden.

Dr. C. D. Evans, Sr., Columbus, lost an auto by it getting afire while he was returning from a country call.

Dr. V. Sedlacek, Omaha, is about to locate at Lynch and will be connected with the Sacred Heart Hospital of that place.

A number of Omaha doctors attended the American Congress on Internal Medicine, which was held at Baltimore, Feb. 21-26.

The lack of a permanent maintenance fund is threatening the perpetuity and usefulness of the Taylor E. Lewis Hospital at Superior.

Dr. O. R. Platt, who has been taking post-graduate work in Chicago recently, has moved from Hebron to North Platte to engage in practice.

Burglars looted the home of Dr. C. W. Walden, Beatrice, while the family was in California. Over $800 worth of furs and silverware was taken.

Dr. H. M. McClanahan was appointed chairman of the Pediatric Committee by the council on Medical Education of the American Medical Association.

Dr. J. F. Stevens, Lincoln, suffered a severe infection of the hand and has been alarmingly ill in consequence. The left arm was sacrificed at the elbow.

Dr. J. B. Dierker, Lawrence, was forced by illness to take a vacation and was temporarily succeeded by his brother, Dr. Ben Dierker of Ft. Madison, Iowa.

Dr. C. R. Gannoway, Stuart, has gone to Syria under the auspices of the relief officials to treat trachoma, he having had previous experience in this line of work.

Dr. Dora M. Judkins-Davies, Tecumseh, has returned from Chicago where she took an extended course in eye, ear, nose and throat work, to which she will largely devote herself hereafter.

Dr. Claude Palmer, Bridgeport, and Dr. Sayles, Bayard, had a narrow escape when the auto in which they were riding was struck "amidships" by a passenger train at a crossing in Bridgeport. Neither doctor was badly hurt.

Let the entire profession rejoice with Dr. F. S. Salisbury a former Beatrice physician, who according to press reports has fallen heir to an estate in Illinois worth upward of two million dollars. Dr. Salisbury is one in two million.

Dr. Stanley Clements of Neligh, Neb., has left for the east to take the regular graduate course of Internal Medicine at the University of Pennsylvania. He expects to do other work along this line in the summer course at Harvard before returning.

DEATHS.

Dr. L. A. Merriam of Omaha, a graduate of University of Michigan Medical School, Ann Arbor, 1873, died on Jaunary 25th, aged 78 years.

The Hospital As a Memorial.

Those who contemplate the erection of a memorial to some individual, group, or event, do well to give earnest consideration to the merits of a well-designed hospital.

Although many monuments and statues are hideous to a degree, some are beautiful and give real pleasure to those who behold them. For these we have nothing but words of praise. But why should not more memorials take the form of hospitals in which practical utility and artistic design find a happy combination? Such memorials will not only give pleasure to the esthetic sense, but also minister to human needs and human aspirations. Indeed, it is difficult to conceive of a more enduring commemoration than a hospital, through which suffering is relieved and the health standards of the community elevated.

This is particularly true of a hospital constructed and operated to serve as a health center from which emanate all the varied activities pertaining to the protection and promotion of the public health.

As a war memorial a hospital is especially fitting. The World War was fought in the spirit of service. Hospitals are altogether in keeping with this spirit. They can, moreover, be made to minister directly to discharged sailors or soldiers, and their families. Incidentally, relatives and friends of soldiers who made the supreme sacrifice, would have the opportunity to endow beds in their names, thereby perpetuating their memory in ministering to human needs. To use the apt phrase of the American City, "Hospitals as war memorials would help the living while commemorating the dead."

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CONTENTS

	Page
Four Cases of Pituitary Disease, Geo. W. Covey, A. M., M. D., Lincoln	97
Thrombosis and Embolism of the Mesenteric Vessels, B. B. Davis, M. D., Omaha	101
Variation in the Strength of Tincture of Digitalis Dispensed in Lincoln as Tested by Biochemical Methods, Arthur L. Smith, A. B., M. D., Lincoln	104
Chronic Prostatitis, W. L. Ross, Jr., B. Sc., M. D., Omaha	106
Dr. Irving W. Potter's Method of Elective Version in Obstetrics, Daisy Hansen, M. D., Lincoln	109
Epidemic Encephalitis in Gage County, F. W. Buckley, M. D., Beatrice	111
Address to the Nurses of the Graduating Class of the Lincoln Sanitarium, June 10, 1920, Inez C. Philbrick, M. D., Lincoln	113
Editorial	118
Resolutions	123
Nebraska Supreme Court Decision Abstract	124
Program	126
General Notes	126
Society Notes	126
About the Doctors	126
Married	128
Deaths	128
Mental Patients in Public Service Hospitals	128
New and Non-Official Remedies	128
Books Received	128

FOUR CASES OF PITUITARY DISEASE.*

Geo. W. Covey, A. M., M. D., Lincoln.

My original purpose in this paper was to review fully the anatomy, histology, physiology and functional pathology of the pituitary body together with a review of the experimental work done on it and the various syndromes arising from diseased conditions; then to report my cases as examples of certain syndromes. However, this would make entirely too long a paper for this evening, so I will call attention to some of the points mentioned above in a brief way, to lay a foundation for the discussion of the cases.

EMBRYOLOGY.

You will recall that the pituitary gland is divided into pars anterior and pars posterior. The former arises from the buccal epithelium as a diverticulum (Rathke), the latter from the neural epithelium. As the body of the sphenoid bone forms, Rathke's diverticulum is cut off and comes to enfold the posterior infundibular portion as a baseball mitt surrounds a ball. In an adult the two lie in the sella tursica. You are all familiar with the anatomy of the sella.

HISTOLOGY.

Histologically the anterior portion is typically a gland of internal secretion, being composed of large sinusoidal blood spaces separated by cords of cells. These cells are either neutrophilic or chromophilic, the latter being acidophilic or basophilic. The arrangement of these cells and of their granules varies in different states of activity or in different physiological states, such as pregnancy, like the cells of other glandular structures.

The posterior part is composed of strands of neuroglia tissue, in the meshes of which are faintly staining masses resembling colloid. These seem to originate in a portion called the pars intermedia and migrate toward the infundibulum, where they are thought to enter the third ventricle.

The pars intermedia is a small group of epithelial cells between the other two parts and surrounding the neck of the anterior lobe. Many of these cells are arranged in alveolar form, the cavity being full of colloid like material.

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*Read before the Lincoln Academy of Medical Science, Nov. 18, 1920.

PHYSIOLOGY.

The physiological activity of the gland has been studied in various ways, including ingestion of gland, injection of extracts, operative removal of a part or all of the gland. The two latter are the most instructive, the injection giving us the physiological action and the operative extirpation teaching us the syndromes of hypopituitarism.

Extracts of posterior lobe, containing material from the pars nervosa and pars intermedia, when injected into the circulation produce the following definite findings as cited by Howell: Slowing of the heart rate; rise in blood pressure; stimulation of all involuntary muscles by direct effect on the fibers; stimulation of certain glandular structures, such as kidney and mammary gland; acceleration of formation of cerebrospinal fluid; and influence on general metabolism, probably by accelerating the process of glycogenolysis in the liver.

Extracts of anterior lobe produce no positive results on injection except in animals with hypopituitarism.

Removal of the posterior lobe does not cause the death of the animal, but shows typical findings. There is increased carbohydrate tolerance, increased fat formation, arrested development of the sexual glands or reversive changes in them. Removal of the anterior lobe produces fall in temperature, unsteady gait, emaciation, diarrhoea and death. In this connection I wish to quote a paragraph from Cushing's "The Pituitary Body and Its Disorders," page 19.

"Our first experiences, therefore, with hypophysectomized adult canines deprived of all but a fragment of the pars anterior disclosed a clinical syndrome with adiposity, increased sugar tolerance, lowered body temperature and reversive sexual changes as its chief features. Later experiences, with the production of corresponding hypophyseal defects in puppies, disclosed a similar syndrome, with a persistence of sexual infantilism and the additional factors of skeletal undergrowth and evident psychic disorders. The latter condition corresponds with the human typus Frchlich. The former is the experimental counterpart of what will be recognized in man as an adult form of this syndrome—hypopituitarism originating subsequently."

On the basis of his experimental work plus his clinical studies, Cushing divides his cases into five groups:

I. Dyspituitarism with both neighborhood symptoms and symptoms of altered glandular activity.

II. Cases with neighborhood symptoms but with little or no glandular symptoms.

III. Cases in which neighborhood symptoms are absent or inconspicuous, but with pronounced glandular symptoms.

IV. Cases in which obvious distant cerebral lesions are accompanied by symptomatic indications of secondary pituitary involvement.

V. Cases of polyglandular syndrome in which the functional disturbance of the hypophysis is merely one and not a predominant feature of a general involvement of the ductless glands.

Under each of these he makes three natural groups with their subdivisions, as follows:

1. Hyperpituitarism predominating.
   a. Gigantism if process antedates ossification (typus Lannois.)
   b. Aeromegaly when of late occurrence (typus Marie).
2. Hypopituitarism.
   a. Adiposity, with persistence of both skeletal and sexual infantilism when process originates in childhood (typus Frohlich).
   b. Adiposity with sexual infantilism of reversive type if it originates late.
3. Mixed forms, or dyspituitarism.

In looking over eighteen histories of patients whose diagnoses included the words "pituitary disease" and extended as far back as 1914, in only five were the observations complete enough, in the light of our present knowledge of the subject, to permit their use. Four of these are given below, and are largely recent cases. In the others certain elements were described which were almost prima facie evidence of a pituitary syndrome, but they lacked substantiating evidence which could now be claimed by present methods of study.

TABLE I.

No. Case	DATE	Glucose Quan.	Blood Before Sugar	Before Urine	B. S. After ½ hr.	Urine After ½ hr.	B. S. After 1 hr.	Urine After 1 hr.	B. S. 1½ hr. After	Urine 1½ hr. After	B. S. 2 hr. After	Urine 2 hr. After	B. S. 6 hr. After	Urine 6 hr. After	REMARKS
II.	3-6-20	120 gm.	0.165	Neg.	....	....	0.304	Neg.	....	....	0.152	Neg.	....	Neg.	Before treatment.
	4-30-20	120 gm.	0.115	Neg.	0.118	Neg.	0.218	Neg.	0.168	Neg.	0.160	Neg.	....	....	After treatment as outlined.
III.	8-12-20	140 gm.	0.280	Neg.	0.300	Neg.	0.340	Neg.	0.360	Neg.	0.340	Neg.	0.202	Neg.	Before treatment.
	11-10-20	140 gm.	0.125	Neg.	0.260	Neg.	0.135	Neg.	0.215	Neg.	0.098	Neg.	....	Neg.	After treatment as outlined.
IV.	5-28-20	120 gm.	0.087	Neg.	0.157	Neg.	0.140	Neg.	0.140	Neg.	0.125	Neg.	....	Neg.	

Notes:

"B. S." indicates blood sugar.

"Before" and "After" indicate the findings before and after taking glucose.

All tests made after 15 hours' fasting.

Blood sugar determined according to Benedict's method, using Helige-Leitz colorimeter.

Glucose test in urine made by the Benedict and Fehling methods.

Case 1. That of a male, aged fifty, married, born in Russia, a mechanic. He was referred to me in 1917 by Dr. J. J. Hompes. His presenting symptom was partial blindness. He gave the following history:

All his life he thinks he has been color-blind. For three years has noticed diminution in vision. First noticed that field of vision suddenly seemed to be narrow. This cleared and vision seemed normal for about three weeks, then suddenly one day he found he could not read. Said it seemed as if there was no light. This time it persisted for a week or so. Again, a year ago, was reading and suddenly the letters disappeared. They seemed to drop out and the words ran together. He cannot see to read now, and has diplopia at times. There have been no headaches. He seems normal otherwise as to history. Denies syphilis, but admits gonorrhoea twenty-five years ago.

Physical examination reveals a man of huge frame but not of the gigantism type. The hands and feet are large. The lower jaw is prognathic. The temporal bone is thick and projects above the eyes. The ear is set behind the midvertical line. Temperature normal; pulse 70; blood pressure 105-80. He is color blind and his visual fields are typically contracted in the temporal portions. The left knee and ankle jerks could not be obtained, and there was evidence of old fractures of left arm and left leg. Otherwise he was physically negative.

Urinalysis shows nothing abnormal. Wassermann test one plus. Roentgenograms of the head reveal a sella tursica 3 cm. x 1.7 cm., which is pathologically large beyond a doubt. Diagnosis: Acromegaly with a pituitary tumor.

Discussion: This is undoubtedly a case falling in Group I, with both neighborhood and glandular symptoms. I believe that the glandular symptoms appeared first as hyperpituitarism, occurring after ossification of the epiphyses, producing an acromegaly rather than gigantism, possibly accompanied by some struma, but not enough to produce neighborhood symptoms. The enlargement has slowly progressed until pressure on surrounding structures is now the main feature of the case.

Course: Operation was advised but refused. He was a hard case to control, and soon left our hands. He is still living, but almost blind. He gets about with a stick.

Case 2.—E. T., age 18, female, student. She appeared in March with the following complaints:

1. Amenorrhoea. She had been regular until six months previously, i. e., September, 1919. Had menstruated again in November and at Christmas time, but not for two and one-half months since.

2. Coincidently she had gained 29 pounds in weight—that is, from 136 pounds to 165 pounds. She also had subluxation of right patella, but nothing else bearing on the present history.

Physical examination reveals a girl of light frame but excessively fat. Her temperature and pulse were normal; blood pressure 120-70. Otherwise negative. A pelvic examination was not made. She firmly denies possible pregnancy. Urinalysis was negative.

Roentgen examination of the head revealed a relatively small sella tursica without signs of erosion (0. 7 x 1.2 cm.).

She was put on reduced diet and posterior lobe extract by mouth. Later, whole gland extract and ovarian residue were administered; but though she felt well she neither lost weight nor menstruated. Eventually she was given pituitrin subcutaneously and then began gradually to lose weight, but not more than four or five pounds under observation, and menstruated twice at regular intervals. She then returned to her home and was lost sight of.

Discussion: This seems to me to be a case falling in Group III—that is, glandular symptoms which appear to be of the hypopituitarism type with sexual infantilism of reversive type. It is an early case and probably will show more marked symptoms later.

Case 3.—A female, age 34; single, American; doing housework and clerking; previously clerking in dry-goods store. Came in complaining of nothing. She was compelled to come by her sisters because of:

1. Overweight. Until five years ago she had weighed from 135 to 150 pounds. Since then has rapidly increased to 217 pounds.

2. For 20 to 25 years has had attacks of temporal headache or headache at occiput, lasting 12 to 18 hours, occurring in groups every few days, followed by free intervals of 3 or 4 months. These attacks are accompanied by visual diminution and brilliant spots on black background.

3. Nervous; irritable; doesn't want to be disturbed by anyone.

4. Heavy eater; craves sweets.

5. At times nycturia 4-5, with increased quantity.

6. Edema of ankles for a number of years.

Family History—Grandmother and aunt on paternal side were overweight; otherwise negative.

Personal History—Menses began at 13 years; never regular; vary from 18 days to 8 weeks. Last three days; very scant—markedly so since increase in weight.

Past Diseases—Typhoid fever four years ago; appendicitis five years ago, not operated upon; adenoidectomy eight to ten years ago. Always had catarrh, and has had several operations on her nose.

Physical Examination—A middle-aged, very fat woman who speaks with hesitation and in a nasal tone. Her speech shows evidence of mental sluggishness and is halting and at times incoherent. She resists most of the things attempted in way of examination. Her fat is largely distributed about the hips, abdomen and thighs. Her temperature is 98.7°, pulse 100, and blood pressure 132-75. Over the backs of hands and wrists are a number of small areas of leukoderma. There is moderate edema of the ankles. The general physical examination is otherwise negative.

Dr. H. F. Morrison reports examination of the eyes as follows: O. D. Media clear. Disc almost round, about normal in size, and color normal; markings obscure and level raised above rest of fundus; markedly reduced capillarity; margins blurred more on nasal side. Peripapillary area shows edema. Nothing abnormal noted in fields. Macular region appears normal. O. S. same as O. D. Diagnosis: Papilloedema, bilateral early stage. Vision O. D. 15-20; O. S. 15-30. Refraction, myopic astignatism.

Examination of nose is thus recorded: Large perforations of septum following previous operation. Dry ozena present.

Laboratory Findings: Urine—specific gravity 1018, alkaline; otherwise negative. A second examination showed a faint trace of albumin which has not been noted since. Glucose tolerance test on 8-12-20 gave the findings shown in Table I.

Roentgen examination by Dr. E. W. Rowe is reported as follows: "The skull is small. The region of the fontanelles is very rough and irregular, showing less than the normal amount of fusion. The coronal suture is wide and prominent. There are no signs of pressure, atrophy, or diastasis of the sutures. The dimensions of the sella are: Depth, 13 m.m. Width, 15 m.m. The sella is large and deep. The dorsum and floor appear very thin. These findings lead to the supposition that the pituitary body has enlarged and is producing some pressure changes within the sella tursica."

Discussion: The symptom complex of obesity, increased sugar tolerance and reversive sexual infantilism, leads to the conclusion that we are dealing with a hypofunctioning pituitary, while the neighborhood symptoms of headache, visual disturbance and papilloedema, substantiated by a large and eroded sella, evidence a tumor of the pituitary.

Treatment and Notes on Progress: The patient was put on a low carbohydrate diet such as would be used in obesity from any cause. She was urged to exercise, but to do so gradually because her rapid pulse and edema led me to suppose she might have some myocardial degeneration. In addition she was given twelve tablets daily of whole pituitary, the equivalent of 48 grains of fresh gland.

On the 26th of August—that is, in thirteen days, her weight had declined to 208 pounds. She had had two headaches in this period. There was no change in her eyegrounds.

On the 27th of September she had been clerking four weeks in another city. She had had one short headache. Her menses had appeared on normal time and were more profuse and normal in character. Her weight was 197 pounds; blood pressure 120-70; pulse 96.

On the 8th of November her weight was 193½ pounds. She had broken away from regime a little, but after eating candy had a bad headache and became repentant. Edema less marked.

Her vision is now improved somewhat, being, without glasses, O. D. 15-25-2, O. S. 15-20-2; and with glasses, O. D. 15-15-1, O. S. 15-15.

Her basal metabolism rate on September 28th was plus four. The sugar tolerance test on November 10th was as noted in Table I.

The physical improvement in this case is equalled by a striking mental effect. The patient now takes a definite interest in her work and surroundings. She desires to lose weight. She talks connectedly and intelligently about herself and current events.

Case 4.—Mrs. J. R. Age twenty-four. Divorced. Bookkeeper. Comes complaining of:

1. Inordinate thirst for past eight to twelve weeks.
2. Coincident frequent urination, voiding large quantities of pale urine.
3. Loss of weight during the same period. Normal weight 115 to 120 pounds; present weight 106 pounds.
4. Loss of appetite for past two weeks.
5. For past three days has had steady dull pain in right lower quadrant of her abdomen. No nausea or vomiting. Has had no acute attacks, but a few times has had mild pain in right lower quadrant. Bowels regular.

Family History: Mother died at 45, cause unknown. Father died at 40 of "dropsy." No family history of persistent polyuria. Has one child three years old.

Personal History: Menses regular and normal. Has always been frigid.

Physical Examination: Temperature 98.6°, pulse 80 and regular, respiration normal; blood pressure 110-65.

She is a slight girl, undernourished and nervous in appearance. Mucosa of mouth parched. Head, neck, lungs and heart negative. Abdomen showed slight resistance and marked tenderness over appendiceal region. Vagina, uterus and adnexae normal.

Laboratory Findings: Urine, single specimen—Pale, 1.005, acid, otherwise negative. Twenty-four hour specimen, 8 a. m. to 8 p. m. 4500 cc. 1.005 alkaline; urea, 0.15 percent equals 6.75 grammes. From 8 p. m. to 8 a. m., 4500 cc., 1.004, alkaline; urea 0.15 percent equals 6.75 grammes. Total, 9 liters; urea 13.50 gms.

Blood urea 36 mgms. per 100 cc.

Uric acid mgms. per 100 cc.

The sugar tolerance test is as noted in Table I.

The intake of fluids, measured for many days, practically equalled the output. It was impossible for her to quench her thirst, and her polyuria seemed to be limited only by the physical limitations to water intake.

Roentgen examination by Dr. E. W. Rowe showed the following findings: Heart and lungs negative. Head—"The sella tursica is small, showing that there is a very small, closely guarded space of the pituitary gland. The dorsum of the sella and posterior clinoid processes are very thin, but overhang the sellar space. Roentgen diagnosis: Sella tursica suggesting pituitary disease."

Discussion: At first pituitary disease was thought of but knowing that pituitary extract from the posterior lobe is an active diuretic, seeming to act by direct effect on the epithelium of the kidney, we hesitated to use it. However, after trying many other means unsuccessfully, and recalling that Cushing has shown that hypophysectomized dogs frequently show marked diuresis and that our roentgen findings showed what might be an abnormally small sella, we gave her one ampule of pituitrin. During the next twenty-four hours her urine output dropped from nine liters to less than five liters and her thirst was relieved. The next twenty-four hours her relief was not quite so marked. After this she was given one ampule of pituitrin every second day, and it was unerringly true that for the 24 hours after it she passed 3500 cc. of urine of specific gravity about 1.008; in the next 24 hours about five quarts; and if we missed the injection it went back to nine quarts with specific gravity of 1.000 to 1.005.

Soon her appetite began to improve. Finally the dosage of hypodermic was decreased and whole gland by mouth substituted, until it was found that 12 to 14 tablets a day, representing 48 to 56 grains of whole fresh gland, would keep her output at about five quarts and relieve her of most of her thirst. Her appetite was good and she held her weight.

The surgeon who referred her to me thought her chronically inflamed appendix should be removed, and as the patient was willing I consented. Later a tonsillar infection (acute) led to the removal of tonsils. Neither operation, apparently, affected her polyuria, and though she is not under my observation I understand her polyuria is becoming less and she is gaining in weight and strength.

During the last year two similar cases were reported in the literature by Kenneway and Mottram in the Quarterly Journal of Medicine for April, 1919. They are reviewed in the Practical Medicine Series for 1920, volume on General Medicine, page No. 434. One of these cases had a bayonet wound of the orbit, the polyuria developing at once and persisting for a number of weeks, finally subsiding spontaneously. Roentgenograms of the head showed an abnormally small sella. In the second case, which had a polyuria of 7 to 8 liters, specific gravity 1.002 to 1.007, injection of pituitary extract caused immediate fall in quantity to about one-half the former and relative increase in specific gravity. The effect was gone in about nine hours. The reviewer says:

"No record has been found in the literature of any case of diabetes insipidus in which the abnormality of the pituitary was excluded with certainty by the post mortem examination; whereas, in a considerable number of cases the disease has been associated with a lesion of the posterior lobe of the gland. However, such lesions are not invariably accompanied by diabetes insipidus. * * *"

SUMMARY.

1. The pituitary gland is of ectodermal origin and consists of pars anterior originating from the buccal epithelium, pars posterior from the neural epithelium and pars intermedia from the pars posterior.

2. It has been determined to be a gland of internal secretion. The secretion from the anterior lobe has a vital function not yet definitely determined, the lobe's extirpation leading to death, its hyperfunction leading to gigantism or acromegaly. The secretion from the posterior lobe has a definite effect on the heart, blood pressure, smooth muscle, glandular activity and glycogenolysis. Removal of the lobe leads to definite syndromes comparable to clinical syndromes of adiposity with primary or reversive sexual infantilism.

3. Four cases are recorded as follows:

a.—Acromegaly with pituitary tumor and bitemporal hemianopsia.

b.—Young female with adiposity and amenorrhoea, benefited by posterior lobe extract.

c.—Female with adiposity, menstrual disturbance, increased carbohydrate tolerance, mental sluggishness, headaches, visual disturbances, tumor of the pituitary and papilloedema, who has been markedly benefited by the exhibition of whole pituitary gland substance in large doses.

d.—Case of diabetes insipidus, markedly relieved by the injection of pituitrin, and who seems to be recovering.

THROMBOSIS AND EMBOLISM OF THE MESENTERIC VESSELS.

B. B. Davis, M. D., Omaha.

The septic thrombosis of the terminal vessels supplying the appendix vermiformis and giving rise to gangrene of the appendix is so common that this form of circulatory obstruction will not be considered in this paper.

Five cases in which definite disturbance of the circulation of the superior mesenteric artery and vein or their branches which came to my attention within a period of eight months will be reported in some detail.

Case No. 1.—Mr. N. farmer, aged 47, entered Immanuel Hospital June 27th, 1916.

About the middle of June 1916 had a severe attack of pain in the right iliac fossa. Took a cathartic and was better. Four days ago June 23rd felt indisposed and could not eat. Began to have diarrhoea and nausea. Later he passed some small hard particles from his bowels, "shot like," as he described them. Has eaten nothing since except a little soup. Has vomited several times and has been distended with gas since the symptoms began. Has had no pain but is sore over abdomen. His heart is somewhat crippled by an old endocarditis.

The next morning, June 28th, after having been packed in ice all night the abdomen was rigid especially in the umbilical region. Considerable tenderness over the whole abdomen. Very little discomfort manifested when he is not disturbed.

Operation, June 28th, 1916. On opening the abdomen some adhesions were found about the appendix due evidently to an attack of appendicitis when he was ten years old. The striking thing found was gangrene of the lower ileum extending from 5 inches above the ileocecal valve for 28 inches upward. This amount of ileum was resected and an end to end anastomosis made. He recovered promptly and I saw him 15 months later in September 1917 and he reported himself as having been entirely well from the time of the operation.

My diagnosis was embolus of a terminal branch of the superior mesenteric artery. The line of demarcation between the gangrenous and healthy part of the ileum was clear cut and the segment of healthy intestine closely adjacent to the gangrenous portion was greatly contracted.

Case No. 2.—Mrs. A. B. housewife, aged about 50 yrs. Entered Immanual Hospital Nov. 13, 1916. She had a hernia and with this exception had been healthy. Three days before her entrance had been to Lincoln where an advertising hernia specialist had injected her hernia with some material, the nature of which I did not learn. She promptly fainted in his office but rallied and returned to her home near Nehawka, Neb., though having considerable pain. About 36 hours later was seized with severe abdominal pain, vomiting and prostration. The following day Nov. 13, 1916 she was brought to Immanuel Hospital by Dr. Thomas of Weeping Water, Neb.

Examination showed a woman with an anxious countenance, temperature 100.8 degrees, pulse 136 and of poor quality, abdomen greatly distended and rigid as a board.

Operation done at once revealed a septic peritonitis. The cavity containing a large quantity of fecal matter and pus. The coils of intestine were greatly dilated and there was a gap in the small intestine as nearly as I could tell at the lower part of the jejunum. The opening was about one-third of an inch wide and its length corresponded to the distance from the mesentery to the exact opposite side of the intestine. The artery had been blocked and the perforation corresponded exactly with the area supplied by one of the terminal braches of the vasa intestini tenuis. I cannot prove it, but have always believed a coil of intestine was in the hernial sac at the time the injection occurred and that its wall was pierced by the needle. I do not know what the injected material was but no paraffin was found.

The hole in the intestine was turned in and sutured and free drainage made use of. The patient's condition continued to grow worse and she died at 6 p. m. Nov 14th, twenty-eight hours after the operation. It is a noteworthy fact that three hours before death her rectal temperature reached 107 2-5ths degree Fahrenheit.

Case No. 3.—Mrs. R. housewife, age 22.

Nov. 26, 1916, I was asked to see her by Dr. B. W. Christie of Omaha. She was 3½ mos. pregnant and on the morning of Nov. 25th had a sudden severe pain low down on the right side. This was followed by vomiting. When I saw her she had the usual symptoms of a not very severe acute appendicitis. She was tender and rigid over the right iliac region with temp. 100 degrees. Advised operation at once feeling that this was even more imperative than usual on account of her pregnancy but had no thought of finding anything more than an ordinary inflamed appendix.

Operation at M. E. hospital at 3 p. m. of the same day. Dr. Hull assisted. Dr. Christie present. Incision was made along the outer side of the right rectus muscle. As soon as the abdomen was opened gangrenous omentum presented in the wound and on examination the entire great omentum was found gangrenous up to its attachment to the colon. The lower free portion of the omentum was attached to an acutely inflamed but non-gangrenous appendix. The appendix was removed and the entire great omentum was removed by ligating it off in small sections close to the colon and cutting it away. The colon seemed entirely normal but there was no circulation in any part of the omentum.

Her recovery was as uneventful as the average case of ordinary appendectomy and Dr. Christie informs me that her child was delivered in good condition at the proper time.

At first I found this condition hard to explain but believe it was an ascending thrombosis starting from its point of contact with the infected appendix. It is interesting to speculate in regard to what would have happened if the operation had been delayed. Would the gangrene have stopped where it was or would it have continued and involved the vessels supplying the colon? Whatever the answer it has always seemed fortunate that the operation was done promptly.

Case No. 4.—Mr. T. was brought to Omaha at 8 P. M. Dec. 10th, 1916 and entered Clarkson Memorial Hospital. Dr. Vance of Peru, Neb., his physician, told me that a few days ago an infected tooth had been pulled but previous to this a tender swelling had appeared on the left side of his neck.

His condition at entrance was described as a very tender swelling in the left parotid region and under the left ear. His temperature was 101.6 degrees and he had almost wholly lost the use of his voice, speaking in a hoarse whisper. The following morning I evacuated a small quantity of pus and introduced a drainage tube. The discharge was not very profuse but his condition remained much the same until 3 P. M. Nov. 13th, when he had a severe chill and his temperature rose to 105 degrees. It was then noticed that the right side of his neck was tender and somewhat swollen. An incision was made on the right side resulting in the removal of two or three drams of pus. His temperature dropped to 99 degrees within a few hours. That night I left the city and did not see him again.

The following day, according to the records, his temperature rose again to 103 degrees and he began to lose ground very fast. His respirations were labored, his abdomen became greatly distended and he expired at 10 A. M. Dec. 15th.

The autopsy showed that pus had burrowed down along the trachea and aorta to the bifurcation of the abdominal aorta. The entire small intestine was gangrenous, due apparently to a septic thrombosis of the superior mesenteric artery.

All this chain of calamities resulted from an infected tooth, a powerful sermon in favor of watchful care of the teeth. Whether a deep dissection of the neck might have saved this man is an important question. In a similar case I think I should try it, though it is probable that the burrowing had already proceeded so low that it could not have been reached.

Case No. 5—Mr. B. aged 39 yrs. entered Clarkson Memorial Hospital Jan. 3, 1917 at 10 P. M. with the history that acute abdominal pain came on at 4 A. M. of the same day. Has had six enemas during the day without any results.

Examination revealed a distended abdomen. Slightly tender all over, but no especial rigidity of the abdominal muscles. Temperature 98.5°, pulse 80. Although there was no definite diagnosis of appendicitis, it was felt that that was most probable and an immediate operation was advised and accepted.

With Dr. Hull assisting, the abdomen was opened and the sight that met our eyes was startling. Almost the entire small intestine was apparently gangrenous. The peritoneal covering was dull and almost black. The mesenteric vessels were also black. Near the ileo-caecal valve, the color was normal, but four or five inches above there was a sharp line of demarcation between the normal and apparently gangrenous portions. As usual at this point there was a tense constriction. The remaining portion of the ileum and all the jejunum were greatly dilated and dark and lusterless. A small puncture was made in one of the veins in the mesentery. An almost inky condition of the blood was apparent, but it was still fluid, though semi-fluid might better describe the condition. If only a few feet had been involved I should unhesitatingly have resected, but that, of course, was out of the question.

Feeling that the case would be fatal whatever was done I delivered as much as possible of the intestinal coils through the incision and packed large hot towels over and around them. After a few minutes application of heat a little mottling was noted in a few places and in one or two places a slight pinkish color appeared. After fifteen or twenty minutes application of the moist heat the intestines were with difficulty returned to the abdomen and the wound closed.

Heat was kept applied to the abdomen for the first few days. For three days he vomited frequently and there was great abdominal distention. At the end of that time he began to pass gas and on the fourth day a good bowel movement was produced by caster oil and from this time his recovery was uneventful.

This case seems unique. No one could have seen these intestines without believing gangrene was present or imminent. There was certainly very great retardation of the circulation, but evidently not complete cessation. I have always questioned whether the operation with the manipulation of the intestines and the use of the heat had any influence for or against recovery. Am inclined to think the operation may have had the effect of re-establishing the circulation. Am greatly satisfied with the result even though my influence in his recovery is so conjectural.

The cause of the condition is also obscure. His arteries seemed normal. There was no indication of any infection. His health previous to the attack had been good. There is plenty of chance for speculation, but very few facts to hang an opinion on.

Much argument has been indulged in regarding the etiology of mesenteric thrombosis and embolism. Most treatises on surgery do not mention the subject at all or dismiss it in a few words. During the past few years a few notable articles have appeared that go into detail and deal with the subject broadly.

One of the most important of these is an article in the Journal American Medical Association in 1904 by Jackson, Porter and Quinby. They give a list of 214 cases, including those occurring in Boston hospitals, those collected from friends and from the literature. They seem to consider endocarditis, atheroma of the aorta and arterio-sclerosis, especially of the mesenteric arteries are of the first rank as causes. Sclerosis of the mesenteric arteries has been found even in cases in which the peripheral vessels or the aorta showed no changes, and this may even involve the finest branches.

LaPlace seems to think that in many cases the whole process is infectious, the infections coming from the gut or from some contiguous infection. Skeel considers infection the important etiological factor. Trotter in Cambridge University Press, 1913 makes an exhaustive study of the subject and leaves the impression that he considers infections play a minor part in causing mesenteric embolus and thrombosis.

It seems to me that many different causes may act and that the man who attributes the condition to infection is as near right as the man who looks upon vascular changes as the etiological factor. Either can produce the results. In case one the patient had an old endocarditis, in case three there was undoubtedly an ascending septic thrombosis of the vessels of the great omentum from contact with the infected appendix, in case four we had a very septic man with pus present and almost if not quite in contact with the origin of the superior mesenteric artery from the abdominal aorta; and in case five where restitution of the circulation occurred, I cannot help suspecting a toxic substance from the intestinal canal playing a part.

I think most of us have gained the impression that bloody and offensive stools are almost always present. This is far from the truth. Case one was the only one of my series with this symptom. Symptoms which tend to make one believe intestinal obstruction is present are found in many of these cases. Do the best we can and many of these cases will be operated upon without a correct diagnosis.

The mortality is appalling. Most writers give the mortality as 90 percent or even more. Much depends on the amount of intestine involved and the promptness of the operation. When a large part of or all the small intestine is gangrenous the case is hopeless. When only a few inches or a few feet are involved a prompt operation before the intestinal wall has been broken down ought to be followed by a low mortality. Those cases not operated upon till the fecal contents have been discharged into the peritoneal cavity and a septic peritonitis is present will naturally be accompanied by a very high mortality. This is another strong argument in favor of prompt surgical intervention in acute abdominal conditions whether it is possible to make a diagnosis or not.

VARIATION IN THE STRENGTH OF TINCTURE OF DIGITALIS DISPENSED IN LINCOLN AS TESTED BY BIOCHEMICAL METHODS.*

Arthur L. Smith, A. B., M. D., Lincoln.

The importance of biochemical assay methods as a means of securing uniformity in the final commercial digitalis product as it is about to be administered to the patient has not been fully appreciated by the medical profession and the retail druggist. When the drug leaves the manufacturers it may be of normal strength, but, due to many causes it may soon deteriorate.

This fact has been brought home to me so emphatically in the administration of digitalis that I take this method of bringing it to the attention of the members of this association. Variability in the strength of crude drugs has long been known, but we have been led to believe by many of the large drug firms that certain standardized digitalis preparations are uniform and do not deteriorate. For some time, if I did not get the proper cardiac response with a digitalis preparation (made by a recognized firm), I considered the case was not amenable to treatment with this drug, especially if the result was the same with several different preparations. Finally, when a fat free, standardized undated tincture of digitalis just received by one of our better pharmacists and manufactured by a prominent drug firm failed to give the proper cardiac reaction, I determined to find if the fault was with the method of administration or with inactive drugs.

To a girl 11 years of age with broken compensation (edema, tachycardia, arrythmia, moist rales in base of lungs) following scarlet fever—from the history,—I gave this tincture, starting with 15 minims three times a day and increased until she was receiving 126 minims three times a day at the end of the seventh day and this was continued three days. There were absolutely no signs of digitalis action upon the heart, no diuresis, and no symptoms of digitalis poisoning. Another tincture in the original bottle,—bottled in vacuo,—dated and standardized, was substituted, 15 minims three times a day reduced the heart rate, caused an increase in the urinary output, reduced the edema and cleared the lungs. With such a wide variation in these two products of supposedly the same strength, I decided to test out the different digitalis tinctures being used in filling prescriptions of the medical profession in Lincoln.

The tinctures, standardized, unstandardized, fat free, and U. S. P., were purchased at the drug stores, in the original ounce bottle if thus prepared, in one ounce quantities from the supply stock, or taken from the drug prescribed for the patient. All tests were completed within five days from the time of collection. The druggists were not informed as to the reason for purchasing the drugs.

The Reed and Vanderkleed guinea-pig method was the test selected. This was decided upon because Pittenger and Vanderkleed (1) believe that "with less than 10 per cent variation above or below the average, the guinea-pig method affords the simplest and most satisfactory means of standardizing the heart tonic group of drugs". This method consists in determining the minimum dose per 250 grams body weight of guinea-pig that will prove fatal in 24 hours when the drug is subcutaneously injected. The tincture of digitalis is freed from alcohol by evaporation on the water bath and then diluted with the required amount of normal saline solution. An area on the guinea-pig's abdomen is shaved, painted with tincture of iodine and the solution injected subcutaneously.

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*Read before Nebraska State Medical Association, Omaha, May, 1920.

At the end of 24 hours the minimum lethal dose (M. L. D.) is between the smallest dose per 250 grams guinea-pig which is fatal and the largest dose which does not kill. A new series is then injected and when the M. L. D. is found it is checked in two guinea-pigs.

The normal M. L. D. of the tincture is taken to be one cubic centimeter.

The following table shows the results of the tests of 25 different tinctures of digitalis. Six of these were "fat free" and 19 were U. S. P. tinctures.

Table I.

Results of Experiments with Tinctures of Digitalis:

No.	Kind	M. L. D. Dose per 250 grams	Percentage of Standard	Percentage of Deterioration	Bought from Drug Store No.
1.	Fat free	4.71	21+%	78+%	1
2.	Fat free	1.54	64+%	35+%	4
3.	Fat free	2.31	45+%	54+%	6
4.	Fat free	2.12	47+%	52+%	2
5.	Fat free	3.82	26+%	73+%	8
6.	Fat free	2.71	36+%	63+%	3
7.	U. S. P.	1.01	99+%	–1 %	1
8.	U. S. P.	1.98	50+%	49+%	13
9.	U. S. P.	2.14	42+%	47+%	5
10.	U. S. P.	1.57	63+%	36+%	9
11.	U. S. P.	1.17	85+%	14+%	14
12.	U. S. P.	3.42	29+%	70+%	11
13.	U. S. P.	1.63	61+%	38+%	19
14.	U. S. P.	2.91	33+%	66+%	15
15.	No description	4.56	21+%	78+%	3
16.	No description	5.12	19+%	80+%	12
17.	No description	2.11	47+%	52+%	10
18.	No description	3.01	33+%	66+%	2
19.	No description	1.92	52+%	47+%	17
20.	No description	6.13	16+%	83+%	4
21.	No description	2.16	46+%	53+%	7
22.	No description	4.31	23+%	76+%	18
23.	No description	4.44	22+%	77+%	5
24.	No description	2.24	44+%	55+%	6
25.	No description	4.14	24+%	75+%	16

Table II.

Results of Animal Experiments on One Tincture No. 11:

Substance—Tincture digitalis is U. S. P. Taken from prescription from drug store No. 3.

Dose per 250 grams	Weight guinea-pig	Actual dose	Results	Date
.9	210	.756	Recovered	1-13-20
1.0	200	.8	Recovered	1-13-20
1.1	235	1.034	Recovered	1-13-20
1.2	250	1.2	Died	1-13-20
1.3	240	1.248	Died	1-13-20
1.14	260	1.185	Recovered	1-15-20
*1.17	220	1.029	Died	1-15-20
*1.17	230	1.076	Died	1-16-20
1.14	225	1.026	Recovered	1-16-20

(*M. L. D.=1.17=85+% of standard).

It will be noted from the above results that the samples varied from 19 to 99 per cent of normal. With one exception the drugs have either deteriorated markedly or were never standard.

It can readily be understood with such a variation in commercial products, the physician cannot depend upon a definite effect as the result of a given dosage, even though this is based upon the weight of the patient. Again, a druggist fills a prescription with 19 per cent of normal tincture and the physician not getting the required results increases the dose until he is giving five times the regular dosage. In the meantime the druggist fills his stock bottle with a new tincture which is normal. Now if the prescription is refilled and the patient continues with the last named dose, he will soon suffer from the effects of digitalis poisoning. Thus the physician must really titrate the drug on the patient with each refilled prescription.

This work has taught me one thing especially, and that is to prescribe only standardized, dated, tincture of digitalis in the original one ounce bottle. Since I have followed this teaching my results are much better than formerly.

REMARKS.

Twenty-five tinctures were taken at random from the stock of 19 drug stores and may be considered as representative of tinctures dispensed in Lincoln.

Tincture of digitalis as dispensed shows a marked variation in its strength.

Impotent drugs may be the cause of poor results in the exhibition of digitalis in cardiac disease in many cases.

The best remedy at present evidently lies in dispensing only dated, standardized tincture of digitalis in the original one ounce bottle.

When a tincture of this type is used, the physician has an accurately potent drug to start with and he can either give it in large doses for a short period or gradually increase it until a definite cardiac response appears.

Reference. 1. J. Am. Pharm. Assoc., May, 1913.

CHRONIC PROSTATITIS.*

W. L. Ross, Jr., B. Sc., M. D., Omaha.
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Gonorrhoea in the male is variously classed as chronic when it persists for from eight to ten weeks or longer after the initial infection. A majority of the patients with gonorrhoea seen at the Night Venereal Clinic of the University of Nebraska College of Medicine have, by this definition, chronic gonorrhoea. A very considerable number of these patients have chronic prostatitis. They have been treated here, there, and everywhere for their gonorrhoea but nowhere for their prostatitis, and as a consequence have received only temporary relief for the urethral discharge.

This overlooking, or neglect to treat the prostatic infection, seems sufficiently prevalent to justify a brief review of the subject of chronic prostatitis. The purpose of this paper is to present such a review, considering the subject as we see it at the Venereal Clinic.

Chronic prostatitis is too complicated a subject to go into deeply in a brief paper. The following points only will therefore be touched upon: Classification, Etiology, Diagnosis, Prognosis, and Dispensary or Ambulatory treatment; omitting altogether consideration of Pathology and Surgical treatment, and closing with a report of a few typical cases.

A satisfactory working classification of prostatitis is as follows:

- Acute prostatitis.
    - Catarrhal (classed also as subacute)
    - Acute follicular
    - Acute parenchymatous
    - Abscess
- Chronic prostatitis
    - Following acute catarrhal
    - Following acute parenchymatous.

Etiology

Acute prostatitis in any of its three main classes is almost always a gonococcal infection representing an extension, during the second or third week of an acute gonorrhoeal urethritis, of the infection to the posterior urethra and prostate gland, the infection, depending on its severity giving rise to catarrhal, follicular, or parenchymatous inflammation. It may also be caused by the lighting up of a chronic infection through traumatism, external or intraurethral (sounds, etc.) exposure to cold or wet, excessive coitus, alcoholism, strictures, etc., and finally some authors mention the acute infectious diseases as possible causes of acute prostatitis.

In an acute inflammation from the lighting up of a chronic infection, however, the gonococcus is not often the guilty organism. The opinion of various writers seems to be that in chronic prostatitis in from a year and a half to three years the gonococcus disappears, giving place to staphlococci, colon bacilli, etc. So that in an acute inflammation due to a lighting up of an old infection we usually have not the gonococcus but some other pyogenic organism to deal with.

The etiology of chronic prostatitis is obviously unhealed acute prostatitis, with a gonococcal bacteriology at first, followed by a mixed infection. In this connection an extract from the latest edition of Keyes' Urology seems of sufficient interest to insert here in toto. I quote the following from his discussion of the bacteriology of chronic prostatitis—"Young, Geraghty and Stevens examined nineteen cases (two non gonorrhoeal) and obtained a growth on agar in eight. The staphlococcus albus was identified thrice, the streptococcus pyogenes twice. The anterior urethra was copiously irrigated and the prostatic secretion obtained through a sterile urethroscopic tube.

Notthaft, using less careful methods, examined 120 cases. He found the gonococcus alone in 5 cases, all within eighteen months of the time of infection; the gonococcus alone or with other bacteria in 60% of cases of less than eighteen months duration, in 18% of cases of from eighteen to twenty four months duration, in 6% of cases of from twenty four to thirty six months duration. The gonococcus was not found after the third year. The gonococcus was found 47 times, other micrococci 119 times, bacilli were found 15 times and other bacteria 14 times.

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*From the Night Venereal Clinic, University of Nebraska College of Medicine.

Cohn, in 12 cases, found staphlococcus albus 1 time, streptococcus 3 times, b. coli once, other bacteria thrice, no gonococci."

We see therefore that chronic prostatitis is practically always a bacterial but only rarely a gonococcal infection.

DIAGNOSIS.

Diagnosis rests upon a consideration of the symptoms, and the physical examination.

In considering the symptoms of chronic prostatitis it is important to remember in the first place that there may be no symptoms whatever. In such a case the disease may be accidentally discovered during the course of a routine physical examination by finding a cloudy or shreddy urine, and proven by filling the bladder with some solution and massaging the prostate, when the bladder fluid passed out again shows us the characteristic pathological prostatic discharge. I have seen no such case at the Venereal Clinic but have run across one or two of them in private practice, and in passing I may say that I have uniformly failed to persuade the patient to have anything done for the condition.

The cases presenting themselves with symptoms which lead ultimately to the diagnosis of chronic prostatitis may I believe be roughly classified into four groups. 1. Those with local symptoms, complaining of more or less indefinite backache, legache, and a general feeling of being 'under the weather.' 2. Those complaining of impotency usually with various neurasthenic symptoms. 3. Those complaining of a chronic, more or less intermittent urethral discharge. No. 4. Those complaining of a complex of general symptoms which the profession is learning to interpret on the basis of some focal infection and in which we find the focal infection to be in the prostate.

The diagnosis of these cases rests upon the finding of pathology in the prostate and the failure to find, anywhere else in the body, sufficient pathology to account for the symptoms. Obviously, if a man complains of backache and from the history and examination we are able to diagnose sacro iliac sprain, for example, it would be folly to look to his prostate for the cause of his backache, at least until we had relieved the sprain.

Having ruled out pathology elsewhere than in the genito-urinary system, we inquire into the patient's history and find, almost always, a history of an acute gonorrhoea from several months to a number of years previously, occasionally well treated but usually treated poorly or not at all. There follows usually a symptom free interval, and then the gradual appearance of symptoms, these symptoms corresponding to one of the four classes I have mentioned, or more rarely including those proper to two or three or even all of these classes.

If now the patient be asked to pass his urine into three conical urine glasses, we find in the first glass, sometimes also in the second and occasionally in all three, little opaque whitish granules or commas, varying somewhat in size, representing the pathological secretion from the prostatic ducts, and mingled perhaps with the long delicate threads of a coexisting chronic urethral inflammation.

If now we fill this patient's bladder with some mild solution, such as potassium permanganate 1 to 4000 or 5000 and massage his prostate and then have him empty his bladder again, we find in the first glass from a very small amount to an inch or more of sediment, finely divided and flocculent if the prostate is the seat of a chronic catarrhal inflammation, coarser, up to mucoid globular masses the size of a pea and even larger in the case of an old chronic follicular inflammation. During the prostatic massage, or at a preliminary rectal examination, we will have noted that the prostate is larger than normal (I have seen one case in which it was smaller than normal) either somewhat boggy and doughy or quite hard and tense, and frequently with one or more areas which after massage give the exploring finger the very definite sensation of a small cavity beneath the surface of the gland which has been emptied by the massage.

The prostate will be more or less tender (always more so than a normal gland) sometimes on one side, sometimes on both. Quite frequently one or both seminal vesicles will be palpable and tender also, but as there is not space in this paper to discuss seminal vesiculitis I must pass on with this brief mention only of that further complication. Occasionally one will be able to palpate a small lymph gland alongside the prostate. The above symptoms and physical findings then enable us to arrive at a diagnosis of chronic prostatitis.

PROGNOSIS.

Our patients are immediately interested of course in the prognosis. Can we cure them? I think so. If we cannot restore the prostate to an anatomically normal gland, we can at least promise a symptomatic cure, provided they will stick by the treatment long enough. From six months to a year will probably be as close an estimate as one can make of the time required in the average case.

TREATMENT.

Briefly this comprises posterior urethral dilatations, instillations of a silver salt, prostatic douches and prostatic massage. Of course if a patient has a concomitant urethritis this must be brought under control with injections and irrigations,—if he has a narrow meatus this must be widened by meatotomy,—if he has strictures these must be relieved by dilatation, or by cutting if necessary, although during my service at the Venereal Clinic we have not had occasion to do a single internal urethrotomy,—and if anything leads one to suspect that the urethral diagnosis is not correct—if the case does not yield to treatment as it should—a urethroscopic examination should of course be made. This latter I consider quite important, though passing it over here with this brief mention only.

When then you have these other complications of the prostatitis, if they exist, under control (I do not say cured, for you cannot cure them to stay cured until you at the same time have cured the prostatitis), treatment of the prostate is begun. At the Dispensary we use the following routine, which is usual though by no means invariable. The patients are seen twice a week, on Monday and Thursday evenings. One evening we irrigate the anterior urethra and then fill the bladder with sterile water or a dilute solution of potassium permanganate or silver nitrate. The prostate is then carefully and thoroughly massaged for three or four minutes and the patient empties the bladder, washing out the discharge. At the next seance he is given an instillation of about ten minims of a solution of silver nitrate of from ½ to 2% strength through an Ultzman syringe or a Bang's syringe sound into the posterior urethra. The next time he is seen he is given an irrigation and massage again, and so on.

Once every three or four weeks this routine is varied by passing a large sound—No. 30 French if possible. We do not use a Kohllman dilator at the Dispensary, although in private practice judiciously used in selected cases it is a very valuable instrument.

Such then is essentially the treatment of chronic prostatitis. There are refinements, obviously unsuited to Dispensary work, which may hasten somewhat the progress of the private patient if they are within reach of his pocketbook. I refer to the psychrophore, for the application of continuous heat to the posterior urethra, and the application of the high frequency current to the prostate through urethral and rectal electrodes. I am not prepared to make any definite statement of their value.

In closing I wish to report briefly four cases selected from the Venereal Clinic, which illustrate respectively the four symptom classes I have outlined above.

Case 1.—The first case is that of a white laborer, age 37, single, who furnishes an example of symptom class 1. He came to the Dispensary on April fifth, 1920, complaining of fairly constant backache. He had had an acute urethritis eight years ago, apparently cured, and soft chancres five years ago. The diagnosis of soft chancre I was inclined to believe as the patient stated he had taken treatment for them at the Dispensary of Rush Medical College in Chicago and that one of the instructors there, whom he named and with whose work I was acquainted, had so diagnosed them. Nevertheless, we took blood for a Wassermann test, which was reported negative.

The patient had no urethral discharge, and a three glass test of his urine was negative. From his history I quote my notes of the rectal examination. "Prostate fairly large and tender. Left seminal vesicle large and tender. Right seminal vesicle large—less tender." His bladder was filled with a dilute permanganate solution, the prostate massaged and the bladder emptied. A considerable amount of material—nearly an inch of sediment in a conical urine glass—was recovered. Under the microscope this material was found to be principally pus. No organisms were seen.

This man was put upon the treatment I have outlined and his backache improved promptly but did not entirely leave. By the middle of June we were still getting considerable material from each massage and a slight backache persisted. At this time the patient left the city to go somewhere in Kansas and we have not seen him since.

Case 2.—The second case is that of a colored waiter, married, age 52, furnishing an example of symptom class 2. I first saw this man during the last of April, 1920, when he came in complaining of impotency and some backache. About a year previously he had been treated at the Dispensary for chronic prostatitis but had stopped treatment after three or four months. I could find no record of the date of his first infection.

Examination revealed a very large, firm prostate, slightly tender, from which by massage a large amount of pus was obtained. (Microscopic diagnosis) He was accordingly put upon treatment and is still coming to us. At first large amounts of material were obtained from each massage. More lately his record shows moderate or only small amounts. He is still impotent, but says that occasionally he awakens with an erection and a few weeks ago he reported a nocturnal emission, from which I conclude that we are relieving the physical factor in his impotency and that some day we will be able to restore his confidence in himself and he will no longer be impotent.

Case 3.—The third case is that of a white man, single, age 22, who furnishes us with an example of symptom class 3. This man came to the dispensary in the latter part of May, 1920, complaining of an occasional urethral discharge for the past eighteen months. He was treated immediately after the onset, while in the military service, for a period of six weeks, and pronounced cured. A week after treatment was discontinued the discharge reappeared. From that time on the patient treated himself with either argyrol or potassium permanganate injections twice a day. Whenever he uses these injections he has no symptoms but immediately he discontinues them the symptoms reappear.

When examined at the Dispensary the diagnosis was gonorrhoeal urethritis, narrow meatus, two anterior urethral strictures and chronic interstitial and follicular prostatitis. Smears from the urethral discharge showed gonococci. Presumably his anterior urethritis was periodically cured or nearly cured by his hand injections into the anterior urethra, only to suffer a reinfection from the prostate whenever he discontinued his medication of the anterior urethra.

The first step in his treatment was a meatotomy, which was necessary in order that we might gain access to his anterior urethra for the treatment of the strictures. Meatotomy was accordingly done on May 20, and the first stricture being very close to the meatus it was felt safe to incise this at the same time. The meatotomy wound was completely healed within ten days and the patient reported that he had noted a very marked decrease in the discharge. For the next three weeks sounds were passed in gradually increasing size until he could take a No. 29 French without much discomfort, and we then began irrigating the whole urethra with permanganate and massaging the prostate, with occasional passage of a sound (finally No. 30 F was used regularly) to maintain the dilatation.

At first considerable amounts of material were expressed from the prostate, but by the middle of September vigorous massage was yielding only small amounts of rather finely divided material and a three glass test of his urine showed all glasses clear. He has used no urethral injections and has had no discharge since June. The patient is not yet cured, but in all probability two or three months more of treatment will suffice to permanently clear him up. The case affords an excellent example of what an unrecognized chronic prostatitis will do in the way of perpetuating an otherwise amenable urethritis.

Case 4.—The fourth case, illustrating the class whose chronic prostatitis operates as a focal infection causing divers and various symptoms, is that of a white carpenter, married, age 50, who first came to the Dispensary June 29, 1919, and who has been coming off and on ever since. I hesitate somewhat to report this case. He is the only one of the four with a history of syphilis and with a positive Wassermann reaction, and exception may be taken to my interpretation. At any rate, certain symptoms persisting, explainable in the light of our present day knowledge on the basis of focal infection, led to a search for such an infection, including a prostatic examination.

When I examined him I found a prostate moderately enlarged and very tender, from which a very small amount of pathologic discharge could be expressed by light prostatic massage. I first examined him in May, 1920 and began light treatment which was kept up until July, since which time I have lost track of him. While under treatment his symptoms, while they did not disappear, did improve, and no better indication of this could be given than the patient's persistent refusal to leave the Dispensary no matter how late it might be until he had had his massage. It made him feel better.

I have selected these four cases purely as examples—we see many of them, some of course not so easily classified into types. And a few I think we see cured. But the Dispensary case is prone to disappear as soon as his troubles cease to inconvenience him.

It is in private practice, working with a more intelligent class of people, that you will have the satisfaction, if you are persistent, of seeing your patients relieved of their symptoms and cured of their chronic prostatitis.

DR. IRVING W. POTTER'S METHOD OF ELECTIVE VERSION IN OBSTETRICS.

Daisy Hansen, M. D., Lincoln.

During the summer it was the writer's privilege to watch Dr. Potter's work at Buffalo, N. Y., from 5 o'clock one afternoon until 1 o'clock of the same night. During these eight hours he delivered six women by his method of internal version. Three others were having vigorous labor pains and would probably be ready for delivery before morning. This one night's work gives some idea of the great number of cases handled in this clinic.

Dr. Potter believes that internal version and delivering the baby feet foremost, no matter what the original presentation makes the labor much shorter, easier, and less dangerous for both mother and child. As a point of minor importance, it saves time for the skilled accoucheur so he can attend many more cases. He claims that this method saves the baby from prolonged and possibly injurious pressure on the brain, the mother from shock and extreme fatigue, and since shock and fatigue make hemorrhage and infection easy, it helps to prevent these, the two greatest dangers in obstetric cases. He thinks that he can deliver by version many women with generally contracted, deformed or funnel pelves who would otherwise have to have caesarean sections.

Dr. Potter leaves the first stage of labor entirely to nature. He will not attempt a version unless the os is completely dilated or easily dilatable. He has no use for manual dilatation of the cervix. If there is some urgent indication for immediate delivery and the os is not dilated, he considers caesarean section "so easy one shouldn't think of anything else."

The first step is to see that the os is fully dilated. Then the anesthetist puts the patient soundly to sleep with chloroform. Dr. Potter will not deliver a patient in her own home, in one of the many Buffalo hospitals, or outside the city, unless his own anaesthetist, whose work he can trust, gives the anesthetic. He maintains that this important work should not be left to greenhorns or to student nurses whose experience is necessarily small.

One of the six deliveries I saw was in the patients' own home, with no nurse and very few conveniences. Dr. Potter sterilized his own instruments in the wash boiler, just as the rest of us so often do in our smaller practice. He cheerfully accepted a promise of a very small fee at some vague future date too, just as the rest of us do. He delivered one patient lying crosswise on her own bed, buttocks well to the edge and a helper holding each leg in a semi Walcher position.

The bladder is always emptied with a soft rubber catheter before the version is begun. The doctor wears rubber gloves of elbow length and always does the version with the left hand. Liquid soap is used for a lubricant and two fingers, then three, four and finally the whole hand is used to completely dilate vagina, vulva and perineum. Then the left hand goes higher and determines accurately the presentation. Dr. Potter does not depend on diamond shaped and triangular fontanelles for this, but feels the foetal ear. He finds a much larger number of minor malpresentations than statistics usually cite, especially occiput posterior.

He then separates the membranes from the lower uterine segment, locates the placenta if it is in the lower segment, so that he may not detach it in doing the version, and finally ruptures the membranes high up to save part of the liquor amnii for later help. The left hand then seeks and grasps both foetal feet and pulls them down, while the right hand on the mother's abdomen, pushes the head up on the opposite side. When the legs are delivered to the knees, he considers the version complete and rests for a moment. The uterus generally contracts soon and with very little traction and guiding the child's sacrum rotates backward and presents at the vulva. Another short rest and the trunk is born, the doctor guiding so that the scapulae rotate to an anterior oblique position. The whole scapula is delivered before the doctor reaches for the arm. Dr. Potter staunchly maintains that the arms will not be extended, crossed behind the head etc., if no pressure on the head through the mother's abdomen is allowed up to this point. After the arms are delivered the child is turned so that the occiput comes to an anterior oblique position. Sometimes both obliques are tried, for many women have asymmetry of the pelvis and while delivery of the head may be impossible in one oblique diameter it may be comparatively easy in the other.

The head is delivered next, the doctor's right hand increasing the flexion by pressure through the mother's abdomen, while a finger of the left hand makes gentle traction in the child's mouth. As soon as the mouth is born, the throat is stroked gently from below upward to expel mucus and liquor amnii from the esophagus. There is no frantic haste to finish the delivery after the mouth is born, for the child can get air and is no danger of suffocating. Generally raising the child's body toward the mother's abdomen will deliver face, brow, etc., over the well dilated perineum. The child is then laid on the mother's abdomen until the cord ceases to pulsate, then this is cut, and later the placenta expressed by the usual Crede method. None of the first five cases showed tears.

The fifth case I saw was a very small woman who came to Dr. Potter from New York just because she expected trouble. The sixth was a woman of 46 with a very large foetus with head extended. Two other doctors had failed to deliver by forceps and had killed the baby and torn the mother badly in the attempt. The birth canal was dry, the uterus contracted down tightly on the baby and the mother exhausted by suffering and hemorrhage. This was really a hard delivery and the doctor remarked that it was not at all like his cases of elective version.

Since Dr. Potter does much consultation work in obstetrics, and gets many cases like these last two, along with others of placenta previa, ectopic gestation, eclampsia, etc., of course he has some morbidity and mortality. But his percentage is lower than that of other doctors and hospitals who handle the same number of cases by the old, accepted methods. The doctor is certainly to be congratulated on doing a useful and original line of work and earning the gratitude of thousands of patients. It is an inspiration to watch him work.

There is one danger for us greenhorns in visiting Dr. Potter. It looks so easy to see him do a version, and there is such a demand for the shortening of labor and relief of suffering among well-to-do women, that one might think "Why, I can do that. I'll go straight home and make myself wealthy and famous at once by doing elective versions." And not having the great skill Dr. Potter has gained by his many years of study, thought, and practice in this line, we might lose some babies and even the mothers too, before we'd learned our limitations.

I do think the rest of us can profit by visiting Dr. Potter's clinic and watching his method of version though. In every obstetricians practice there is a certain proportion of cases that must have help. Where it's a choice between version and forceps, version seems decidedly the better plan. Many of the doctors who frequently resort to forceps, claim they save the mother hours of suffering and never hurt a baby. But we've all seen enough cases of permanently scarred heads, birth palsies and epilepsy in babies, following the use of forceps, to say nothing of palsies, internal and external lacerations and semi invalidism in the mothers, to know that the danger is always there. The two great dangers in version have always been delay in the delivery of the after coming head, and tears for the mother. Dr. Potter's technique certainly reduces these two dangers to a minimum.

EPIDEMIC ENCEPHALITIS IN GAGE COUNTY.*

F. W. Buckley, M. D., Beatrice.

During the late winter and early spring of the present year there appeared in Beatrice and adjacent territory a few cases of a malady whose clinical picture was new to the local profession and which seemed to fit the numerous descriptions of encephalitis lethargica.

The influenza epidemic of 1918-19 had raged in this district with great fury, returning in milder form the next winter to afflict a goodly portion of the population.

Thus it will be seen, the soil was prepared and the time ripe for the occurrence of epidemic encephalitis.

Direct contact with this disease being a new experience to me and my colleagues, I shall herein attempt to record the clinical features and course of cases coming under my observation:

Case 1.—Mrs. M. Housewife, Age 35. Entered Mennonite Hospital Feb. 3, 1920 as a meningitis suspect.

She was previously a healthy woman of robust physique, with a history of having been seized the week before with an attack of la grippe which was then prevalent in the community.

The usual onset of chills, fever and general body ache was noted, which was soon supplemented by sharp lancinating pains in the right arm. The pains in the course of a few days extended to the face and the left arm. They were of violent intermittent character causing the patient to writhe in agony with each paroxysm. Morphine in liberal doses did not control them and the patient was unable to sleep. She vomited for two days before admission to the hospital and was unable to take food. Bowels and kidneys functioned normally.

When seen at the hospital the pains had extended to the lower extremities and were of the nature of intense spasms lasting a few seconds and occurring every two or three minutes. The pains in the upper extremities and head had almost subsided at this time. During these spasms the patient executed rapid choreiform movement of all the extremities, with facial contortions as though enduring great suffering.

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*Read before the meeting of the Third Councilor District Society, Sept. 29, 1920.

Examination during the quiet intervals showed apparently normal mentality with no disturbance of speech. The pupils were equal and reacted to light. The tongue was red and parched. The face and surface of the upper chest had a deep red blush not evident elsewhere on the body. Chest and abdominal findings negative.

There was some rigidity of the neck. Kernig's sign was present. The reflexes were present and exaggerated. Pressure along the large nerve trunks did not elicit any tenderness.

Temperature 101°, Pulse 110; Respirations 24.

Urine: Sp. Gr. 1.032—otherwise normal.

Blood: White blood cells 10,000—Polynuclears 68.5%—Small lymphocytes 30%—otherwise normal. Unfortunately no spinal puncture was made.

During the next three days the temperature ranged from 99° to 101°; pulse 90 to 120. The condition became progressively worse, the only relief from suffering being obtained by the administration of ether. On the fourth day after entering the hospital she sank into coma accompanied by repeated convulsions. The temperature rose to 107° and death shortly followed.

The classification of this case was difficult until there occurred several typical cases of acute encephalitis in the community.

The diagnosis of epidemic encephalitis was based upon (a) the fulminating nature of the disease, (b) nerve root pains radiating to the extremities with no peripheral tenderness, (c) choreiform movement, (d) vomiting, (e) coma and convulsions, (f) partial cervical rigidity and Kernig sign, (g) low white count.

A spinal fluid examination would have been of value. The presence of other typical cases of encephalitis in the community at the same time helps to confirm the diagnosis.

Case 2.—V. M. A little girl aged 10, residing in the country, was brought to the Lutheran Hospital Feb. 18, 1920 for a brain abscess.

The family and past history of the patient was negative except for a mild attack of influenza a year previously.

Three weeks prior to admission she had come home from school complaining of a severe left sided head pain, intermittent in character. The following day she was sent home from school because of head pain and dizziness.

The pains occurred at infrequent intervals at first, but gradually the time of recurrence lessened to half an hour. There was no fever or other physical findings to indicate the serious nature of her illness. The efforts of the attending physician, who saw her twice during the first two weeks, to relieve the pain were unavailing.

At the beginning of the third week she showed signs of mental torpor and lethargy. Several days later she vomited after taking food or drink. This continued for a period of two days then stopped.

During all this time the temperature remained slightly subnormal, the pulse and respiration slow.

Examination upon entrance showed a normally developed child. There was marked lethargy. She responded rationally to questions, although her reaction time was very slow. Ptosis was present but no muscular imbalance. The pupils were equal and reacted to light. Eye grounds showed moderate amount of congestion.

There was a moderate degree of cervical rigidity and a suggestive Kernig sign present.

Chest normal. Abdomen was slightly scaphoid. No skin lesions, or lymphatic involvement. Reflexes were present.

Urine negative.

Blood—white blood cells 17,000—polynuclears 79%.

Spinal fluid clear with no increase in pressure. It contained a moderate number of lymphocytes, no polynuclears. The globulin test was positive, the cultures and Wassermann test were negative.

The following day the somnolence and cervical rigidity were more pronounced, patient was unable to swallow. Pupils were unequal and there was a divergent squint. A right sided spasticity developed with hyperextension of the foot. That evening the temperature rose from 98.2° to 104°, pulse from 54 to 116, respiration from 14 to 24.

The next and last day was marked by coma, convulsions and death.

The diagnosis in this case I consider substantiated by the spinal fluid findings.

Case 3.—Physician, age 39. Good family history and previously healthy himself. Entered Lutheran Hospital March 30th as a uremic coma suspect. The history obtained subsequently was as follows: Three weeks ago he began to feel "grippy and run down" as he expressed it. He had occasional chills, fever and headache, which were relieved by catharsis and antipyretics to such a degree that he continued his practice. The symptoms returned, however, accompanied by drowsiness. Four days prior to entering the hospital he noticed difficulty in keeping his car in the road and great difficulty in passing another car. The cars always occurred in pairs so he experienced some trouble in choosing which one to miss. He also noted the peculiar behavior of his clinical thermometer, for his patients seemed to have two distinct temperatures instead of one. After four days of these wierd experiences he sank peacefully to sleep in his chair at night and did not regain consciousness until a week later in the hospital.

Examination upon entering. The somnolence and mental torpor were extreme. His answers to questions were slow but fairly rational. Ptosis of the eyelids. The forehead wrinkled when an attempt was made to open the eyes. The pupils were regular and reacted normally. There was some muscular imbalance present. The left eye turned in. The teeth and tonsils showed evidence of chronic infection. There was some cervical rigidity and a partial Kernig sign. The chest and abdomen normal. The reflexes were sluggish.

Temperature 100°—pulse 80—respirations 20.

Blood——white blood cells 10,000, polynuclears 64% small lymphocytes 27%, eosinophiles 2%.

Two days later the lethargy began to disappear although the patient was subject to peculiar illusions and hallucinations especially at night. His conversation was coherent for several sentences and then rambled. Slight difficulty in swallowing appeared for two days. Otherwise the course was uneventful. After two weeks stay in the hospital the patient was discharged with no symptoms except a tendency to double vision when fatigued, which persisted for about a month.

This case presented the classical symptoms and could hardly be mistaken for any other disorder.

Two other cases presented by colleagues, excellent observers, were diagnosed by them as encephalitis. Their accounts fit well into the general description of the disease and for the sake of brevity will not be described in this report.

SYMPTOMS AND DATA OBSERVED AND GLEANED FROM THE REPORTS OF OTHERS:

Onset may be gradual or sudden with or without prodromata such as asthenia, lassitude, pain, headache, vomiting, which some patients regard as influenza.

Drowsiness—all grades, apathy, dullness, somnolence, stupor and coma. Sometimes there is no lethargy present or it may occur during the day and be replaced by insomnia at night. Sleep is not restful.

Mental disturbances—depression, anxiety, delirium.

Headache—better described as head pain; unilateral, frontal, temporal or parietal; intermittent or constant, usually severe and obstinate. Not always present.

Vomiting—occurs during the early or middle period and persists for a day or two.

Diplopia and ptosis—usually early symptoms.

Motor disturbances, monoplegia, hemiplegia, diplegia, contractures, choreiform movements, ataxia, and general or localized convulsions.

Sensory disturbances—anaesthesia, paraesthesia, hyperaesthesia, severe pain in the trunk and extremities.

Temperature—slight elevation, one or two degrees as a rule, may reach 104° or 105°. Course may be afebrile or subnormal.

Pulse—where the temperature is low there is apt to be a bradycardia but if there is elevation the pulse is correspondingly accelerated.

Respiration—slow and deep, at times resembling Cheyne-Stokes type.

OTHER THINGS

Mask facies; suggestive or actual cervical rigidity and Kernig sign; sluggish or absent patellar and plantar reflexes.

Urine—trace of albumen and a few hyalin casts.

Blood—red corpuscles and haemoglobin unchanged; leucocytes from 10,000 to 20,000 the rule.

Spinal fluid—there is an increase in lymphocytes but no polynuclear leucocytes are present unless there is distinct meningeal involvement. Globulin test positive.

Duration—fulminating cases are fatal in a few hours to a few days. Recovery may be rapid, symptoms lasting from a few days to a month or more. In the majority of instances the symptoms persist over a period of several months.

Prognosis—variously reported from 5% to 35% mortality.

Treatment—There being no specific remedy for this disease, treatment must follow the general principles of rest, nutrition and elimination. Special indications are to be met as they arise. Resort to lumbar puncture as a therapeutic measure should be considered in the presence of distinct meningeal symptoms.

It is to be remembered that the lethargic state is not a restful sleep so that recourse to sedatives may be necessary.

Early recognition it seems to me is the basis of proper treatment, thus avoiding the possibility of treating the patient as a case of meningitis, brain abscess, uremia, eclampsia, etc.

CONCLUSIONS.

1. A new and unusual disease occurred in Gage County during the present year.
2. Evidence is offered pointing to its being encephalitis lethargica.
3. The presence of a few cases within a limited area indicates that there must have been others which escaped recognition because they were atypical.
4. Diagnosis may be extremely difficult because of the numerous forms the disease may assume.
5. Whether or not we shall see another case of encephalitis lethargica, until after the next pandemic of influenza is problematical. The general practitioner should be on the alert for its appearance during the coming winter and spring.

ADDRESS TO THE NURSES OF THE GRADUATING CLASS OF THE LINCOLN SANITARIUM, JUNE 10, 1920.

Inez C. Philbrick, M. D., Lincoln.

I appreciate very much the kindly feeling which led you to give me the privilege of talking "at" you this evening, an occasion upon which custom does not allow you to question and talk back, as in the class room.

Your invitation is an evidence of that good will and cooperation which does and must obtain between the professions of medicine and nursing, in the interests of our patients. The medical profession has given you your opportunity, and your profession has been literally hands and feet to ours—executing its orders, running its errands. Indeed, in talking with my professional brothers, I have often ventured the opinion that had they the work of preparation for obstetrical and surgical cases, the cleaning up afterward, and the subsequent care of the patients, the fields of obstetrics and surgery would soon be deserted by male practitioners, an opinion which thus far has not been challenged.

This occasion is naturally of great interest to you, the members of the graduating class; but it is of much interest to all gathered here —the founders and staff of the hospital, your superintendent, clinical instructors, fellow nurses, families and friends. Graduation days are a part of our common experience, and insure common sympathetic interest. They are days full of satisfaction, hope and promise—satisfaction over tasks accomplished, hope of future success, promise to their several communities of the release for service of another band of workers. The wish of all here present is, I am sure, that the ideals acquired by you in the course of your training may spur you on to great endeavor; that you may be possessed of that tenacity of purpose that will enable you to cling to those ideals and persistently pursue them. Each day in life's school will be a graduation day—out of old tasks into new duties and responsibilities. May you acquit yourselves as creditably upon these as upon those which have marked the pursuit and end of your three years course of training.

Your graduation and entrance into the profession of nursing comes at an auspicious time. Never before was the work of women so fairly appraised and so truly appreciated. Especially is this true of the work of medical women—physicians and nurses. The horizon of your opportunity bounds vastly greater stretches than did that of classes graduating even a half dozen years ago. It was the Crimean war, with its wellnigh absolute lack of medical supervision and service, that gave Florence Nightingale, the founder of your profession, her opportunity and incentive. The World War just ended, and the recent epidemic of influenza, have emphasized as never before the need and beneficence of organized and applied medical knowledge, and skilled and intelligent nursing. Working together during the World War, the medical and nursing professions opposed their preventive, conserving and constructive forces to the most stupendous destructive forces known in history, and in a large measure neutralized their effects.

The passing from the training school into the independent practice of your profession, in the field of your choice, implies upon your part the assumption of greatly increased responsibility. Hereafter there will not be constantly at your side a superior officer to assume responsibility for you. To that obedience and faithfulness demanded of you in the training school, you must add that courage and ability that will enable you, in the emergency, to think and act for yourself, and here a word as to whom you are primarily responsible.

The physicians and older nurses present may characterize my opinion as bolshevistic. Nevertheless, I am convinced of its truth. While the professions of medicine and nursing owe one another good will and fair treatment, the responsibility of each is first to the patient. These professions do not exist for the gain or glory of their members, but for the good of their patients. Should ever in the course of your professional experience an occasion arise whereupon your responsibility to your patient seems to you to clash with that to the attending physician, make your decision in the interests of your patient. But first be sure that you are not confounding details with principles of treatment. All well-trained and intelligent physicians follow the same general principles of treatment and procedure, but vary very much in detail. For example, should the physician come from the street to the obstetrical case and proceed to examine the patient without washing or with only an indifferent washing, of his hands, he would be violating the fundamental principle of safe obstetrics. But, if he thoroughly and sufficiently scrub his hands, it is of no importance whether he afterward dip them in a solution of hydronaphthol, bichloride of mercury, potassium permanganate, or what not—the thorough scrubbing is the essential.

You are not automata, machines to carry out orders mechanically, but beings possessed of intelligence and conscience, which it was intended by the Creator you should use. The medical profession, in its so-called ethics of the medical consultation, has ignored responsibility to the patient. Too often the medical consultation has been used to bolster the attending physician in the confidence of the patient and his family, and gloss over his mistakes. There is no ethics of nursing or medical practice that is not first ethics. The intelligence of the public in medical matters is increasing rapidly, thanks to health propaganda in current papers and magazines, through the clubs, government agencies and innumerable associations. The public will not long acquiesce in a system of unsound ethics. In my opinion, the state employment of nurses and physicians, with obligatory consultation in every case, and standardized treatment, standardized in harmony with the consensus of best medical opinion, is near at hand. No physician or nurse is to be trusted at all times. The switchman asleep at the switch has his counterpart in every calling. We all have our blind spots, our occasional absent-minded lapses. Standardization of treatment will lessen the terrible responsibility of the individual physician, safeguard the patient from mistakes of judgment, and do away with the probability of clashes between the nurse's responsibility to the attending physician, and that toward her patient.

Time was when nursing outside the training school implied private duty nursing. Outside certain very large and progressive hospitals, few institutional positions save those of superintendent, night supervisor and operating room nurse, were to be had. You will now have a much wider field of choice. Institutional positions are increasing more rapidly than the institutions themselves, many of the old hospitals establishing new positions, as that of dietician, laboratory worker, teacher of pupil nurses, floor supervisor, etc. The last development in nursing, and that offering greatest opportunity for those qualified by knowledge, physique and temperament, is public health nursing in its various phases—exemplified in the school nurse, the city or county nurse, the tuberculosis nurse, the student health service nurse in our colleges and universities, etc.

At this time, when women are represented in practically every occupation listed in the census (telegraph and telephone linemen, and members of the army and navy being the only exceptions), public health nursing is easily one of the half dozen occupations offering the greatest opportunity for the exercise of women's distinctive tastes and talents, developed through agelong experience. The demand for public health nurses is increasing commensurately, and more, with the rapidly enlarging scope of preventive medicine. The public health nurse bears the same relation to the private duty nurse as does preventive to privately-feed medicine. In all public health work outside chair and desk positions, the women official, nurse or doctor, is needed and successful. She can easily gain entrance to homes where men cannot. The children at once accept her as a friend. She will note innumerable details to which men are oblivious. I recall the incident of the woman member of an institutional board, on an investigatory visit, where poor care of the children was suspected, who, when confronted by a bunch of apparently well-cared-for youngsters, asked one of them to remove her shoes, thereby disclosing footless hose. Women can minister to the children, the helpless sick and dependent, as men cannot, simply because through centuries women have done these things, while men were out hunting and slaying, tilling and exploiting.

As public health nurses you will be welcomed by the men of the medical profession. The more knowledge and ability you possess, the more your work will redound to the glory of the chair and desk incumbents of official public health positions. In this respect you are more fortunate than are the women of my profession. You see, we are competitors, and we can talk back—a hard-won prerogative that has never been popular with the masculine fraternity since long before the days of Paul.

I am not going to attempt to discuss the relative merits of private duty and public health nursing—it was long ago said that comparisons are invidious. All essential human service is equally worthy of recognition and reward. But let us consider some of the characteristics of each type of nursing which may influence your choice. In private duty nursing you will have intensive social relations with the few; in public health nursing, extensive work with the many. In private duty nursing, you will be thrown largely with persons who are fortunately circumstanced—the well-to-do and wealthy classes; in public health nursing, with the helpless, delinquent, defective and poverty-stricken. In private duty nursing you will be more confined; in public health nursing, if you live up to your opportunity, your work will be more strenuous and your hours less regular.

In choosing which of these two fields, if either, you will enter, you must take stock also of your peculiar temperamental traits and your special talents. Have you that patience, persistence and optimism that will enable you, day after day, to adjust yourself to the idiosyncrasies of intimate companionship, attend to innumerable details, cheer the hopeless chronic invalid? Have you the grim determination that enables you to hold on to the patient who is acutely and desperately ill, and help to keep him from dying by the sheer force of your will? Are you timid of disposition, fond of safe retreat, without ambition for public recognition and approval? Do you inherit the typically feminine ability to thrive physically within four walls? If you possess these traits, you will wisely choose private duty nursing. On the other hand, are you possessed of the investigating habit of mind—more interested in discovering the causes of our physical ills and eradicating them, than in simply alleviating these ills? Have you initiative, resourcefulness, tact, courage, a liking for all sorts and conditions of people, organizing ability, the ability to speak in public? In short, have you the wide open type of mind rather than the restricted and intensive? If you possess these qualities you should be a success in the field of public health nursing. And do not make the mistake of assuming that you do not possess certain qualities because you have never given them opportunity to disclose themselves. Take public speaking, which I have known to be the lion in the way of taking up public health work on the part of one otherwise splendidly qualified. Any woman who is thoroughly conversant with her subject, really desires to get it before her audience, and will forget the legend of the sweet and gentle voice of woman, can speak acceptably in public. In all my experience, I have never known a woman to be unable to make herself heard sufficiently far when the need arose. Why pretend when she gets upon the public platform, that she cannot make herself heard?

Another point which may influence your choice is the relative demand for private duty and public health nursing. In my opinion, the demand for graduate nurses of your amount of preparation for private duty nursing is on the decline. It is just that you should command wages commensurate with the time, labor and money you have expended in the course of your training. But the demand in private duty nursing must be increasingly for nurses trained intensively in essentials, over much shorter periods of time, receiving a different title (perhaps that of trained attendant,) and allowed less pay, to meet the needs of the average income and average case. The person of average income, or less, cannot afford to pay, for the nursing of the normal obstetrical and surgical case, or the minor medical, wages such as are rightly demanded by the nurse qualified to assume the superintendency of a hospital or charge of the operating room. To compel him to do so is comparable to requiring the grade schools to employ as teachers only doctors of philosophy. The qualities most needed in the nursing of the average case are cleanliness, common sense, patience and good cheer. The first, asepsis, can be thoroughly ground in in far less than three years; and if the probationer has not the other qualities she should never be allowed to go beyond the probation stage. In cases of extremity there will always be need for the highly trained private duty nurse, but these cases are comparatively few in number, and are bound to become progressively and rapidly fewer as the work of public health officials, physicians and nurses, becomes more effective and far-reaching. Already knowledge of dietetics, of the control of contagious disease through destruction of causative germs, by isolation, or by immediate neutralization of their toxines by antitoxines or the conferring of immunity by immune serums; of the relation of focal infections to later heart, kidney and nerve disease; periodical examination in industrial plants and by insurance companies—all these marvelous strides of preventive medicine have vastly curtailed the fields of acute and chronic disease. And the work of clearing the field is only begun. Of course, the luxurious rich, and there will be progressively fewer of these in future as opportunities for exploitation are withdrawn, will always be able to command the services of the highest paid nurses for the most trivial ills. But I am sure, no self-respecting highly trained nurse, having proper esprit de corps, will prostitute her talents by devoting herself to such service. The recent world epidemic of influenza strikingly emphasized the need of the nurse intensively trained in essentials, and working for a wage within the possibilities of working people.

On the other hand, the demand for public health nurses is increasing enormously. In a recent issue of the Journal of the A. M. A., I saw an advertisement for fifty public health nurses for western counties. And the installation of the public health nurse in every community, as is bound to obtain, is only begun. Necessarily, public health nursing demands wider knowledge than that possessed by the graduate nurse. To provide such courses in public health subjects, have been opened at Columbia and Chicago Universities, at the Northwestern, and I doubt not in other institutions. Some of the subjects with which the public health nurse must familiarize herself are sanitation, control of communicable disease, industrial hygiene, medical school examination, child hygiene, supervision of midwives, health surveys, etc. The public health nurse must understand the sociological causes of disease—for example, the relation of slums and crowded and insanitary tenements to tuberculosis. She should have a better understanding of the fundamental physical sciences, as chemistry, than she carries with her out of the high school. To prevent discouragement of any of you who may be thinking of taking up public health nursing, let me say that these subjects are quite possible of understanding and mastery by those of high school and training school preparation.

In addressing a body of professional women the thought necessarily arises that many of you, perhaps all of you, may exchange your profession for that of home maker, of wife and mother—a natural and laudable course, provided you make a fair exchange, and this your experience will, I am sure, help you to do. No training could better fit into the needs of the home than yours. But you must remember there is a vast deal to home making outside preventing and caring for physical ills. The time is fortunately past when a husband constituted the only source of food supply—when he was a necessity. You will be able to marry simply because of affection and congenial tastes. It is neither necessary nor right that you should lay down your profession because you marry. There will be innumerable occasions in your own home and in the community life, during the years when children confine you largely to the home, when you can turn your professional knowledge to beneficent use. There will be many years after your maternal duties are fulfilled when you may and should pursue your profession—not necessarily for wages—for there is much unpaid health work in every community crying to be done. The chief evil to be laid at the door of the present form of marriage is that it has developed a race of parasites among women—women who live upon others, perform no productive service. The highest instincts of the soul die under such conditions. To be self respecting, everybody must have an individual life, pursue some independent calling, be economically independent—potentially, not necessarily actually. If you do not actively practice your profession, read the Journals of Nursing. Keep up with the progress of your profession. Do not bury your talent—use it. As so well expressed by the Baccalaureate orator of the University the other day, remember that you are going out of the training school not primarily to make a living but to make a life. You will be a vital part of the life of your respective communities. Within a few weeks you will be equally responsible with men for the conduct of the government under which you live, and government is simply public home keeping. Keep up with the events and issues of the day. Be faithful to your duty as voters. Your professional knowledge will enable you to help in the solution of the health problems of your communities. Should you follow private duty nursing, do not let your necessarily restricted and confining environment restrict and confine your reading and interests.

There is an economic side to your professional work outside the fees you will charge and collect. You owe to your future, providence. Nurses are prone to be improvident. Working so much in the homes of the luxurious rich, they are liable, almost sure, to acquire tastes and habits out of the keeping with their incomes. Save and wisely invest for the future—in endowment insurance, real estate mortgages, etc.

The other day I picked up a copy of the American Journal of Nursing, and happened to turn to a page on which a correspondent gave the inscription which was written by the Dowager Queen Alexandra of Great Britain upon the card which accompanied her wreath of red and white carnations and lilies to be laid upon the casket of one of your profession—Edith Cavell—who, by her death, exalted not only her profession, but womankind. In closing I can wish nothing better than that upon your final graduation day it may be truthfully said of you, in the words of that inscription.

"Life's race well run,
Life's work well done,
Life's crown well won,
Now comes rest."

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AMERICAN COLLEGE OF SURGEONS MEETING.

In the February number of this Journal was published the Program of the First Clinical and Scientific Session of the American College of Surgeons, Nebraska Section, and a Bulletin for each day's clinical work was later issued, giving in detail just what the operations, cases exhibited, and discussions upon special subjects were to be, so that visiting surgeons and physicians could select intelligently from the rich material presented what they wanted to see and have explained. One of the members of the college who has attended many of the meetings in other states made the remark that, "the program presented in Omaha was not equalled by that of any other state with the possible exception of New York."

The policy pursued by the committee in charge was to invite not only the forty-five Nebraska members of the college but also all members of the state association, as well as a few well-known men from neighboring states. There was a registration of three hundred and ninety-three besides many of the local profession and others were present who did not register. It was the general comment that never before has there been held in Nebraska a medical meeting comparable to this one in enthusiasm, quality of the papers and discussions, and number of clinics with their rich and varied material. An opportunity was afforded to present to visitors from our own and other states how Nebraska ranks as to the standard of its medical profession, and also if one can judge by many flattering criticisms, the profession can take a just pride in what her medical schools and their affiliated hospitals are doing.

The Symposium on Cancer was a notable one. Men of national reputation, earned by work accomplished, took part not only in the professional meetings but also in the public meetings,—those held in the City Auditorium and in that of the Young Women's Christian Association. They delivered addresses of great interest and importance to the general public on the cancer question. The education of the people in the early recognition of the symptoms of cancer, and the fact that in its early recognition is the hope of cure, was the exhortation of these speakers.

The Hospital Conference brought out that the standardization program so far applied only to one-hundred bed hospitals, but would in the near future be arranged to apply to fifty-bed, or even twenty-five or fewer-bed hospitals. Some objection is being made as to what has been done in Nebraska hospitals by the Standardization Committee, and the Chicago gentleman having charge of this matter promised to give it more careful consideration. There is a strong sentiment among some prominent medical men in Nebraska that one or two hospitals which have been accepted as satisfactorily standardized according to the program of the American College of Surgeons should not have had this preference over several others which as yet have not been accepted.

A very forceful address at the Public Auditorium was delivered by Judge Harold M. Stephens of Chicago, in which he explained to an audience of more than two thousand, what the American College of Surgeons stood for, what its obligation meant, and what the reciprocal relationship between the doctor and the public was. The judge pointed out the evils of fee-splitting, and it is believed that this evil received the hardest knock that has ever been administered in this part of the West, by the straightforward, honest presentation of the subject before the lay audience. The public will take care of this evil when it is properly educated. Since the meeting the signs of the times are interesting: Many laymen are asking for explanations of just what this evil is. They don't like the idea, as Judge Stephens explained it, of having their "bodies sold to the highest bidder." A number of men are asking, "What can I do in order to be admitted to membership in the American College of Surgeons?" and the layman will one of these days ask, "Why are you not a member?"

Nothing occurred to mar the good feeling which prevailed throughout the meeting. Comradeship seemed to be the sentiment rather than anything suggesting antagonism.

— J. E. S.

THE LOST ART.

Junior physicians present themselves to the public with the full knowledge that they have a more thorough scholastic education than most of their senior confrerees. Yet every clear thinking young doctor realizes only too keenly that he lacks the judgment of values that is enjoyed by his senior brother. This may not set well at first thought, but the fact remains. There is a reason. Our seniors have two tremendously valuable assets which the younger group do not possess. One of these will be acquired, namely, experience, with its rich reserves upon which to draw in time of need; the other, valuable beyond measure, very few of the present day graduates possess and many never will. We refer to the ART of practice. This the older physicians were taught. It is generally admitted, and sadder still, accepted, that the ART of medical practice is gradually but surely disappearing. This statement is in no sense a criticism of the present desirable high standard of education, but does imply that there is something of vital importance lacking in the finished product. It is our opinion that in the enthusiasm for scientific advancement, the ART has been unconsciously neglected. The result of eliminating the premedical and postmedical apprenticeship period, at which time the former medical man, by associating with his preceptor, learned the ART and acquired clinical experience, has robbed the professional man of the last decade of these factors as well as of an insight into his life's work, which is, the treatment of human nature as well as human ills.

It has made a short cut possible, which results in many needless misfits, for the longest way round still remains the shortest way home. It has opened the flood gates of specialization at the expense of internal medicine which is the real foundation of the science and art of medicine. While it is possible that at some future time the laity may be so well educated that they will require only science, it is our judgment that it is much better for all concerned, if in the meantime, well educated medical men apply the necessary art, instead of delegating it to the horde of cults, now and in the future, as capital for misuse.

— C. C. J.

ULTRAISM VERSUS CONSERVATISM IN OBSTETRIC PRACTICE.

Have the obstetricians of the present day passed the period of "Watchful expectancy"? Shall we allow the parturient woman in this 20th century to do her best under careful observation, or shall we endeavor to reduce midwifery to a surgical basis, set a time and place for delivery by some artificial method and then proceed to deliver the goods? Has obstetrics ceased to be an art? Has delivery been reduced to a science? Shall we go after a child as we would a tumor? Shall we forget there are two lives at stake from the date of conception all the way to the finish? Are we conserving human life and welfare by radical measures? Have we nothing to learn from the accoucheur of one hundred years ago, who went to his work with scarcely any equipment save a piece of gum opium which he administered to relieve unusual or unnecessary pain—some powdered ergot for emergencies, who never dreamed of anesthesia, and whose operative instruments at best consisted only of his hands, a catheter, possibly a pair of forceps, and exceptionally instruments of destruction to reduce the size of the foetal head; who knew nothing of asepsis and antisepsis, and yet in spite of all their limitations were successful men in their day and generation, and have bequeathed to us a heritage that is invaluable?

The obstetrician of fifty years ago, (in my day and generation), went to his duties a little better equipped. He had his alkaloids in place of crude drugs, with his hypodermic needle, and he also had his anesthetics, and was taught to use morphine and atropine hypodermically to a certain degree in the first stage of labor, and anesthesia to the extent of mitigating in a large degree the pain of the last part of the second stage. "Twilight Sleep" has no monopoly on the pain relieving schedule in labor, morphine, atropine and anesthetics having been used many years before scopolamin was manufactured.

With the advent of the 20th century a

great many new inventions have been developed. To open up the slowly dilating cervix Champetier de Ribes gave a conical bag. Bossi gave us the powerful steel dilator. Another taught manual dilatation, while a fourth instituted the cervical incisions. Two of these four methods remain with us until the present day as approved procedures, conical dilators and cervical incision, which at a later day was enlarged upon and known as vaginal caesarean section. Modern surgery has rendered caesarean section a comparatively safe operation, and it would now seem that we have a variety of procedures that can be adapted to meet any emergencies that may arise. The question is, to what extent these methods and operations which have been adopted for emergencies can be introduced into a routine practice. It is not so many years ago that rather prominent men recommended the use of the conical bag, either at the beginning of labor or possibly before labor began, as a method of precipitating labor and bringing it to a rapid termination, and the advocates of this measure reported a great success in their work and a great saving of time. More recently we have a man coming to the front and recommending elective version as a safe and efficient method of delivery after the cervix is fully dilated. I expect that soon some one else will say why not combine the two. Dilate with the conical bag and deliver by version in all your cases.

Without criticising the advocates of these measures, would it not be well to stop and consider that what may be done in a modern hospital by a skilled man is not a safe practice to teach to the rank and file of the young men and women who are going out into the world to practice medicine?

The use of forceps is a legitimate measure under certain conditions but their use has been adopted as a time saving measure in many instances and real tragedies enacted. Is it not a fact that the time saving element has been over exploited in both rapid dilatation of the cervix and elective version? As a matter of fact what advantages has version over forceps, ordinarily? I am not discussing the indications for any of these methods of delivery, but only the abuses. Why not adopt caesarean section as the painless, time saving measure in the majority of cases? One reason is that nature is too rapid for us and we don't get there in time. As a matter of fact a large percentage of multiparae go on to a rapid delivery with a minimum of discomfort if given a chance. Very often babies are born before the physician arrives. Only a few days ago I was called to attend a woman, with two neighbor women for assistants, who gave birth to twins without any material aid on my part. And I was gone from my office only two hours. Can you beat that?

With the rapid dilatation of the cervix what has been accomplished? Practically this: At a set time, whether labor has commenced or not, the cervix has been dilated more rapidly than it ordinarily would be. The pain may not be as long drawn out, but it is usually more intense while it lasts. The second stage has been somewhat accelerated if a large sized bag has been used and the bag has passed entirely through the parturient canal. All manipulation increases the danger of infection, and infection is one of the real dangers of childbirth, and until such time as we are able to render the parturient canal aseptic, something which we are not able to do at the present time by any ordinary measures, one of the real dangers of childbirth has been increased by rapid dilatation methods.

Regarding version, no one questions the fact that version in selected cases is a wise method of delivery. On the other hand elective version, in which one deliberately performs the operation in a large percentage of cases, seems to be violating most of the traditions of midwifery. To begin with; the first stage of labor has to be complete before the version is performed. This period of labor has been in no way relieved or shortened by this measure. Only the second stage of labor has been expedited. We have been taught, most of us, that version very materially increases danger to the child and in a less degree to the mother. We have even been taught that normal breech delivery is more dangerous for both mother and child than normal delivery. Have we been mistaken all these years in this regard? Is it true that our statistics are in error? Can any expert management do as good work and as safe work to both mother and child as delivery by normal methods? Has nature made a mistake in this matter? If under expert management it is possible to deliver the child more quickly and as safely for both mother and child by version as by normal labor, is it still a fact that under less expert management, under the management by which a vast majority of all babies are delivered, it is safe to recommend elective version? I look with some apprehension on some of these newer ideas, and still believe that after a period of time they will, to a large degree, be relegated to the junk heap, as methods of choice in the ordinary case.

— A. B. S.

REEDUCATION OF THE ADULT BLIND.

Do you realize that every year the oculists of Nebraska see from seventy-five to one hundred adults who have recently lost their sight or at least so much of it that it prevents them from following their regular means of securing a livelihood? In a few of these cases blindness has come on with sufficient slowness so that the patient is able to adjust himself to a blind existence; but in the large majority of cases, the loss is sudden, either from accident or from an acute inflammatory process, and the patient is left helpless and frequently very much depressed over what seems his unsurmountable loss. The oculist does what he can to encourage these patients, assuring them that many who have lost their sight in adult life have been able to readjust themselves and many oculists go into details as to methods of procedure, advising as to the formation of certain systematic habits, etc.

It is generally known that the state has provided an institution at Nebraska City for the education of the blind, and we know, through personal acquaintance that the authorities are very willing and anxious to cooperate in the reeducation of those who have lost their sight late in life.

It has been our experience that comparatively few of those who lose their sight in adult life are able or willing to take advantage of this institutional training. Many of them feel so helpless away from their family and friends, or else have duties to which they feel they must attend, even though in a very halting manner, that in a large majority of cases, it is up to the relatives, guided by the family physician, to give the patient the training that he needs and to which he is so justly entitled.

Heretofore the State has been perfectly willing to cooperate in the training of the patients at home, through traveling teachers who either stayed with the patient the necessary time, or, in the more thickly settled districts, had the training of several of these blinded persons. It was found that often the best of these teachers were themselves blind and in addition to their practical experience, were able to stimulate the pupil by personal demonstration of what could be done by one who had been deprived of the use of his eyes. Within the last year, however, owing to the insufficiency of funds, this home instruction of the blind has been discontinued and it is to be hoped that the physicians of Nebraska will use their utmost influence to have this system reestablished as soon as sufficient means can be secured.

It has been the experience of those who are most familiar with the reeducation of the adult blind that there are a great many avenues of remunerative endeavor open to a person who does not see, aside from the more familiar ones of weaving, knitting, broom making, etc. Many blind men have become experts at poultry and stock raising, fruit culture, etc. To the person of musical instinct or to one who has had some training in this art, proficiency is rather quickly attained, and many blind people have become very successful as teachers. The same is true with typewriting and other forms of business management. The British have been very successful in training their blinded soldiers along the lines of carpentry, cabinet making, shoe making, and especially in massage, a recent report stating that they were unable to supply the demand for expert masseurs.

From the start, the patient should be encouraged to learn reading, as he can in this way amuse himself. Numerous magazines are published for the blind and there are large circulating libraries at the disposal of those who can use them, the government transporting these books through the mails without charge. It is surprising how quickly a person of average intelligence will become sufficiently skillful to derive a great deal of comfort in reading.

Above all, the patient should be urged to enjoy himself socially as much as possible. He should not be treated as different from anyone else, should be encouraged in every way, and should be taught self reliance as rapidly as possible. For this encouragement and help he must depend on his friends, but as too frequently his friends are his worst enemies, insisting on doing everything for him and not allowing him to help himself, he must depend on his family physician for his development in the line of independence.

— J. M. P.

DR. J. F. STEVENS.

Dr. J. F. Stevens of Lincoln died at his home Wednesday, February 23, 1921, following an illness of over four weeks.

Dr. Stevens was born in Van Buren, Illinois, August 19, 1859. His father died when he was but two years old and all of his early training he owed to his mother. He graduated from the Seminary of Paw Paw, Illinois, at the age of twenty-two, receiving the degree of Bachelor of Arts. One year later he entered the Northwestern University Medical School, and received his degree of Doctor of Medicine in 1884 from that institution. Dr. Stevens practiced at Shabbona, Illinois, until 1888. During his stay at this location he married Miss Lillian Carnahan.

In 1893, after a short sojourn at Kansas City and in Nebraska, Dr. and Mrs. Stevens located at Lincoln where he was engaged in practice until the time of his death. Shortly after locating in Lincoln, he entered the University of Nebraska, and later received the degree of Master of Arts, and eventually became Professor of Introductory Medicine in this institution.

Dr. Stevens was typically a student and his interests were varied. He belonged to his County, State and National Medical Associations, and to the Missouri Valley Medical Society. In addition, he was a member of the State Pharmaceutical Association; he was a Fellow of the American Academy of Medicine, a founder of the American Anthropological Association, a member of the American Academy of Political and Social Science and the Nebraska and Mississippi Valley Historical Societies.

A life time devoted to taking care of the sick, with still time left for interest in other things, is the record left by Dr. Stevens. He could be seen making his calls from early morning until late at night, day in and day out almost never taking a vacation, but giving his sole time to those who sent for him Always kind and considerate, he made a place in the hearts of those who knew him, better than is given to most men. His death leaves a vacancy that time alone can fill.

— R. B. A.

THE MAY MEETING.

The next Annual Meeting as already announced, will be held in Lincoln, May 9-12, inclusive. The committees are making every effort to make this the best meeting that our association has ever held.

The general plan of the program will be the same as last year. The House of Delegates will meet Monday evening, May 9th, and the scientific program will begin on Tuesday morning, May 10th. This morning will be given over to those who have subjects which they wish to illustrate with lantern slides or X-ray pictures. On Tuesday afternoon, the usual program of scientific papers will start and continue through the next two days. All papers, as was done last year, will be read in the general sessions, thus giving every one a chance to hear all of the papers he desires.

In addition to the scientific program, the local committees are planning for the entertainment of the members and their families during the session, and they promise that everyone will enjoy himself while in Lincoln.

This meeting should be the largest one that the association has ever held. Our membership is the largest in the history of the association, and this with the general excellence of the program should draw a record attendance.

— R. B. ADAMS, Sec.-Treas.

SECTARIAN MEDICINE.

A bill before the legislature provides that chairs of Homeopathic and Eclectic Medicine be added to the curriculum of the University College of Medicine at Omaha. This is rather an astounding proposition in view of all the known facts pertaining to these isms. Home opathic and Eclectic medical departments of the Nebraska University were established about three decades ago, but after a precarious existence of several years they died of inanition. A Department of Homeopathic Medicine connected with the Iowa University for close to forty years became extinct a few years ago for want of students. Other eastern universities have had similar experiences.

Whatever merit there may be to the proposition the matter might well be left to the governing board of the University, the Board of Regents, to decide.

WHAT WILL THE HARVEST BE?

It is very evident that in keeping with the present period of depression the legislature now in session will endeavor to enforce the most rigid economy and that liberal appropriations may not be expected, as a general proposition. Press reports indicate that much of the proposed welfare work will not get beyond the committees, that no new institutions will be created, but that a substantial new hospital building will be provided for the Hospital for Tuberculous. at Kearney.

HOSPITALS AND BUSINESS.

Business management, earning capacity, safe margin of profit over cost, giving people with money to spend a chance to spend their money, are all factors just as necessary in a hospital as in a modern hotel.

While the Province was in the pioneer stage, small hospitals could be and were kept open on a combined business, charity, deficit met by government, and civic contribution basis. Every year the making of the balance sheet brought appeals to Government and city; in response the Hospital would be lifted over the bumps and started on another year of financial uncertainties.

Those days are gone. The enormous costs and outlays of modern hospitals cannot be met by casual financing. There must be a complete reorganization. Business principles must be supreme in hospital management.

Instead of semi-charitable institutions throughout, the hospitals must be reorganized along the lines of first-class hotels, with the adjunct of semi-private wards and regular wards in which care and treatment can be given those whose means are insufficient to pay the charges.

The expenses of these charitable adjuncts can be accurately estimated, and government and civic grants expended for their upkeep.

The city cannot afford to lose money on cases originating outside of Vancouver. These must pay their own way or the Government must pay for them. But what both the city and Government can refuse to subscribe to, is a one to ten-dollar per day service on which the hospital only collects half. Super-service, whether for room, food or medicine, can and will be paid for as soon as people are educated to the fact that they can no longer sponge on the hospital.

The hospitals themselves have fallen ill; the remedy is business. Selling at or below costs means bankruptcy. Hospitals as at present designed and managed, secure only the unprofitable parts of the business, just the same as if the largest of city hotels should try to sell accommodation on the methods and prices of a country inn. Inefficiency and bankruptcy are the certain results.

Getting the money will have to be combined with curing the sick, in order to keep the hospitals going.—The Vancouver Sun.

If our members would read our advertising pages each month, and be so thoughtful as to let our patrons know we appreciate their patronage, the problem of increasing our income from advertising would be solved.

Our new advertisers in this issue are: Laboratory of Surgical Technique, Dr. Emmet A. Printy, Director, Chicago; Donley Stahl Co. Lincoln Brace and Splint Shop and The Smith-Dorsey Co., all of Lincoln.

RESOLUTIONS.

DR. MARY A. QUINCY.

The Saunders County Medical Society, at their annual meeting in Wahoo, Nebraska passed the following resolutions and it was voted that a copy of the same be spread on the minutes of the society and that a copy also be sent to the Nebraska State Medical Journal for publication.

Whereas Dr. Mary A. Quincy has been a faithful and loyal member of the Saunders County Medical Society since 1903 and whereas her services as secretary of the society from that year until death, with the exception of one year when she was president of the society, were such as to be an inspiration to scientific medicine and legitimate practice, that this society feels keenly her loss and wishes, in this simple way, to express an appreciation of her faithful service to the practice of medicine in which she engaged at Ashland, Saunders County, Nebraska since the time of her graduation.

In her official capacity as secretary of the society, she made an endeavor to make the Saunders County Society, a real, active and co-operative working body, which she did by many personal letters urging the scientific practice to all its members, making forceful endeavor always to have the County Society meetings attractive and educational as well as entertaining.

She represented the County Society as delegate to the State Association on various occasions and her records with the State Society of the County organization were such as to attract comment from the State officers. Her regular attendance at State meetings was such as always to make Saunders County a real active part in the State Association and at this time it is our sad duty to Resolve farther:

To extend our sympathy and our own sadness to her many friends in the profession and also to her relatives at their untimely loss at this time, due to a long and serious illness of diabetes with which she suffered without fear or loss of individual and personal courage. She was laid to rest in the Ashland Cemetery, where her father and mother are buried, her father being an honorable veteran of the Civil War.

DR. JAMES FRANKLIN STEVENS.

The members of the Lancaster County Medical Society having met in special session, Wednesday evening, Feb., 23rd., adopted the following memorial resolutions:

Nature has again taken account of the services rendered by one devoted to her cause. Her reward though cruel, must be accepted as inevitable. Dr. James Franklin Stevens gave of his best that others might live. His body has gone from us but his spirit lives in the hearts and in the memories of those whom he served and with whom he worked. Devoted to his profession and to the development of the best in life, he has gone to his reward leaving a record of good deeds and of honorable service.

Be it therefore resolved that in token of our grief in his loss and our keen sympathy for his bereaved, we spread upon the records of the Lancaster County Medical Society this memorial to Dr. Stevens, and that we send a copy to Mrs. Stevens.

NEBRASKA SUPREME COURT DECISION ABSTRACT

County Board May Employ Physician to Examine Persons Afflicted With Contagious Diseases And Must Pay For The Service.

Action against Wheeler county on alleged contract made between the county and the plaintiff, Dr. A. L. Bartlett, a physician. Plaintiff was requested, at the instance of the board of health, to diagnose and examine the ailments of a number of persons, residents of the county, during a smallpox epidemic.

There is evidence tending to show that the physician on the board of health was unable to diagnose the disease and called it "Cuban itch." No quarantine had been established, and many persons afflicted with the disease walked about the streets and in public, so that the epidemic got well under way before it was discovered what the ailment was.

Plaintiff undertook the work, in this emergency, at the instance of the county board of health. Each of the specific examinations was made at the request of the board. There is evidence also that the chairman of the board of county commissioners requested that the county board of health take this action. Plaintiff made extended trips over the county, examining cases, so that quarantine might be established. When he made these examinations he also instructed the persons afflicted how to care for themselves and, in some cases, prescribed for them. These first trips are the only ones charged against the county. When his services were completed he filed a claim. The claim was disallowed by the board of county commissioners and he appealed to the district court, where the matter was tried without a jury and judgment was rendered in his favor for the full amount of the claim.

The fees charged by plaintiff are shown to be reasonable; no issue is raised on that question by the evidence. But the defendant contends that the individuals receiving the services should be required to pay for them, and not the county, since the people, with one exception, were not paupers and not a county charge.

(3) As to the liability of the county for the services rendered, we must look to sections 2737 and 2738, Rev. St. 1913. By these sections of the statute, the county board of the county is directed to make and enforce regulations to prevent the introduction and spread of contagious diseases within the county, and, to that end, to establish a county board of health, which is given jurisdiction over the matter throughout the county, except in incorporated cities and villages. Where the local board fails to act with sufficient promptitude and efficiency in any emergency, it is expressly provided that the state board of health shall step and enforce its own regulations in that county, and that the necessary expenses so incurred shall be borne by the county. It would seem to follow that when the county itself acts in an emergency it was not intended that it be limited in its powers more than the state board, and that the necessary expenses incurred should, in that event, also be chargeable to the county. Though it is not expressly provided that when the county acts in providing regulations to prevent the spread of disease the necessary expenses so incurred shall be a charge against the county, that liability must necessarily be inferred. If that were not true, then the county would, by law, be required to perform a duty and at the same time be prevented from using the means necessary to its performance. The county board could not quarantine without learning, through the services of a physician, whom to quarantine, and such services of a physician could not be procured without pay.

It might be questioned whether 1104, Rev. St. 1913, has any bearing on this case. This statute declares unlawful all contracts or orders made by the county board or members thereof, in behalf of the county, "in the absence of a statute expressly authorizing such contract to be entered into."

It has been repeatedly held by this court that, though counties have no inherent powers, yet their agents, acting in their behalf, have not only such powers as are specially granted, but also such as are incidentally necessary to carry into effect those which are granted. Lancaster County v. Green, 54 Neb. 98, 74 N. W. 430; Christner v. Hayes County, 79 Neb. 157, 112 N. W. 347. Those powers, incidentally necessary to carry into effect the authority specially described, are a part of that authority itself, and are as expressly authorized, within the meaning of this statute, as when specially mentioned. It was not the intention of this statute that counties should be denied the exercise of those powers which are found to be necessary to carry into effect a power specially granted. If that were the intention, it would in many instances effect a repeal of those very provisions of the statute expressly granting the power, for to take away the means of performance is to destroy the power itself. Such would be the result in this case. The provision of the statute referred to, we take it, was intended to prevent counties from entering into those contracts, express or implied, and was intended to declare such contracts unlawful.

where no statutory authority is to be found justifying the making of such a contract.

The right of the duly constituted county authorities to employ a physician in an emergency of this kind seems to us to come clearly within the express authority given to the county to provide and enforce regulations in order to prevent the introduction and spread of contagious diseases, and it must be that the examination and diagnosis necessary for purposes of quarantine of contagious diseases is one of the regulations contemplated and intended to be covered by the statute. Town of Knightstown v. Homer, 36 Ind. App. 139, 75 N. E. 13; Hawthorne v. Board of County Commissioners, 79 Kan. 295, 99 Pac. 598.

When a physician performs services of such kind for the county he, of course, ought to be allowed to recover from the county, though the individuals examined and quarantined were not paupers nor a county charge. The obligation of the county rests upon contract, and, though it might be that the individual would be liable, the county is at least primarily liable to the physician. City of Mankato v. County of Blue Earth, 87 Minn. 425, 92 N. W. 405; McKillop v. Board of Supervisors, 116 Mich. 614, 74 N. W. 1050; Elliott v. Kalkaska Supervisors, 58 Mich, 452, 25 N. W. 461, 55 Am. Rep. 706; Rae v. City of Flint, 51 Mich. 526, 16 N. W. 887.

(4) The jurisdiction of the county board in this case was limited by statute to that territory outside of incorporated cities and towns, and, though it may be presumed, so far as the petition and proof are concerned, until the contrary appears, that the contract of employment was for those patients only who were within the jurisdiction of the county board, nevertheless it affirmatively appears from the evidence that a number of individuals to whom plaintiff rendered services were residents of incorporated towns when the services were rendered, and the charge of $57 for services to these persons plaintiff should not be allowed to recover.

It is therefore ordered that in case plaintiff shall, within 20 days from the entry hereof, file remittitur in the amount of $57, the judgment of the lower court, so reduced in such amount of $57, shall be affirmed, plaintiff to recover costs.

The following is a communication received by the Adjutant General of Nebraska from the War Department, and his memorandum.

2nd. Ind. MB. 210. 1-G-Nebraska.
War Dept., Militia Bureau, January 21, 1921.
To the Adjutant General of Nebraska.

1. It is the policy of this Bureau to extend Federal recognition to National Guard medical officers prior to the recognition of the units or detachments to which they are to be assigned provided they meet the requirements of National Guard Regulations, in order that they may be used in making the physical examinations required by Paragraph 347, National Guard Regulations, 1919, provided the number so appointed does not exceed the number of prospective vacancies for medical officers as required by Tables of Organization in the units of the National Guard allotted to the State. to which they belong for the year in which the officers are appointed and recognized.

2. It should be borne in mind that medical officers should reside in the towns or communities in which the units to which they are to be assigned are to be recruited and located, and that they should be appointed in grades to correspond to the vacancies to be filled.

3. Actual time spent by properly designated medical officers in examination of recruits will be considered as constituting instruction.

(Signed) J. McI. Carter,
Brigadier General, U. S. Army,
Chief of Bureau.

STATE OF NEBRASKA
ADJUTANT GENERAL'S DEPARTMENT
LINCOLN

MEMORANDUM February 16, 1921.
No. 2.

1. **National Guard Reserve:**—Attention is invited to Circular Letters 62, 76 and 86, Militia Bureau, W. D., 1920, and all National Guard units of this State are authorized and urged to enlist Reservists, not to exceed the number allowed in Circular Letter 62, as after July 1, 1921, the minimum peace strength of National Guard units shall be the peace strength prescribed in Tables of Organization for the Regular Army.

The present blank forms for ordinary enlistments, will be used for Reservists' enlistments, altering them as prescribed in Circular Letter 86, M. B. 1920.

2. **Grades of Enlisted Men:**—A section of paragraph 2, G. O. No. 36, W. D., 1920, reads as follows and will be complied with: "On and after July 1, 1920, all reports, records, and communications pertaining to enlisted men will refer to them by the appropriate designations of their grades (2nd grade, 4th grade, 7th grade, etc.) as prescribed herein, the former designation of a grade will be used in communications only when necessary to identify the individual and then will be shown in parenthesis after the name."

3. **Official Designation of Officers and Units:**—A careful perusal of each paragraph of Circular Letter No. 75, M. B. 1920, is enjoined for the purpose of securing uniformity in correspondence and other paper work.

4. **National Guard Medical Officers:**—

(a) In addition to the Medical officers required for Headquarters of a Medical Regiment and seven (7) Medical Units allotted to this State, Medical Officers will be required for duty with units of other arms as they are organized.

(b) There are now vacancies for a Major and Captain or 1st Lieutenant on State Headquarters Staff and for a Major and two (2) Captains or 1st Lieutenants with the Infantry regiment. There are also two (2) vacancies in the grade of Captain or 1st Lieutenant with the regiment for Dentists.

(c) Suitable Medical men, preferably those with previous military service, are desired for the Federalized National Guard of Nebraska. The pay from the Federal Government for the grade of Major and higher is $500.00 per year and for Captain and lower, four-thirtieths of the corresponding grade in the Regular Army, per month. Captains in command of units receive $240.00 per year, additional.

(d) Medical officers are desired who reside at the station of a National Guard unit of the State. Medical men can obtain information from local unit commanders concerning the steps necessary to secure Federal recognition.

BY ORDER OF THE GOVERNOR:
H. J. Paul,
The Adjutant General,
Nebraska.

PROGRAM.

The program for the annual meeting of the Nebraska State Medical Association which will be held at Lincoln, May 9-12, will be found on advertising page xxi in this issue.

GENERAL NOTES.

At the annual meeting of the members of The American Congress on Internal Medicine, held at Baltimore, Md., week of February 21-26, the following officers were elected:

President—Dr. Sydney R. Miller, Baltimore, Md., Clinical Professor of Medicine, Johns Hopkins University.

Vice-President—Dr. Ellsworth S. Smith, St. Louis, Mo., Professor of Medicine, Washington University.

2nd Vice-President—Dr. James Rae Arneill, Denver, Colo., Professor of Clinical Medicine, University of Colorado.

Secretary-General—Dr. Frank Smithies, Chicago, Ill., Associate Professor of Medicine, University of Illinois.

Treasurer—Dr. Clement R. Jones, Pittsburgh, Pa., Professor of Medicine, University of Pittsburgh.

Dr. H. M. McClanahan attended the meeting in Chicago of the committees on postgraduate and undergraduate work. The various committees on postgraduate work were well represented either in person or proxy. The reports on postgraduate work were read on Monday, March 7th. On Tuesday, March 8th, the reports on undergraduate work were read.

Notable personages present at the Clinical Meeting A. C. S., Omaha, March 3 and 4, were: Dr. Burton T. Simpson, Buffalo, N. Y., and Dr. Francis Carter Wood, New York City, both cancer research workers; Dr. William McCarthy, Rochester, pathologist, Mayo Clinic; Dr. J. T. Case, Radiologist, Battle Creek, Mich.; Dr. George Gellhorn, St. Louis; Judge Harold M. Stephens, Chicago, Director American College of Surgeons.

SOCIETY NOTES.

The Adams County Medical Society met in the Chamber of Commerce rooms, February 8th, at 8:00 p. m. with a large attendance. Papers were read by Dr. J. W. Brown on Lethargic Encephalitis, and Dr. C. B. Calbreath on Diagnostic Symptoms of Kidney and Ureter in Stones of the Kidney.

The Nebraska-Iowa Pediatric Society held its monthly meeting at the Methodist Hospital, Omaha, on February 17th, with twenty-two doctors present. After a splendid dinner served to the members by the hospital, the following program was given, Dr. J. A. Henske acting as chairman: Presentation of a case of Intracranial Hemorrhage with Recovery, Dr. W. H. Taylor. Case of Diabetes Insipidus, Dr. Clyde Moore. History and discussion of a case of Aplastic Anaemia, Dr. H. B. Hamilton. History and discussion of a case of Pernicious Anaemia, Dr. M. G. Wohl. Orthopedic Condition of Children, Dr. R. D. Schrock. Tonsillar Condition of Children, Dr. W. F. Callfas. History and Post-Mortem Findings of Sarcoma of the Left Kidney with Metastatic Changes of Liver, Spleen, Scalp and Orbit, Dr. M. G. Wohl. Discussion of Blood Findings in Alimentary Glycosuria and Report of a Case of Septicaemia of Newborn—demonstration of Streptococcus Haemalyticus in Blood Cultures, Dr. J. A. Henske.

ABOUT THE DOCTOR.

Dr. F. E. Carroll, formerly of Omaha, has located at Laurel.

A home for registered nurses is to be established at Hastings.

A hotel building at Sidney is being converted into a hospital.

Dr. A. B. Tashjean of Norfolk recently visited in New York City.

Dr. Julius Lingenfelder, formerly of Norfolk, has located at Beemer.

The new Evans hospital, Columbus, is expected to be opened about April 1.

Dr. Adin H. Webb of Lincoln is recovering nicely from a mastoid operation.

Dr. Harold Gifford, Omaha, returned March third from a trip to British Guiana.

David M. Blum, Nebraska City, graduated from Rush Medical College last month.

Dr. C. R. Buckley has become exalted ruler of the Beatrice Elks for the current year.

Former Judge Howard Kennedy has been appointed receiver for the Fenger hospital.

Ground has been broken for the new $100,000 hospital at the Milford Soldiers' Home.

Dr. May L. Flanagan of Lincoln has been spending a couple of months in California.

Dr. Lee R. Farmer, Kansas City, succeeds the late Dr. C. E. Hershman at Alliance.

Dr. J. B. Dierker, Lawrence, after an illness of several months, has resumed practice.

Dr. H. M. Hepperlen has been chosen president of the Chamber of Commerce in Beatrice.

Medical Director Edward R. Stitt has been nominated for Surgeon General of the Navy.

Dr. and Mrs. I. C. Wood of Omaha have returned after a three months' stay in California.

Dr. A. E. Wade, Lexington, submitted to an operation in an Omaha hospital last month.

Dr. J. L. Mace has returned to Hastings after an extended postgraduate course in New York.

The friends of Dr. J. B. Ralph, Omaha, regret to note the loss of his wife by death at Los Angeles.

Dr. R. B. Klepner, formerly of Hannibal, Mo., has become associated with Dr. E. Wenger, Lincoln.

Drs. S. J. Jones and R. G. Cressman have been appointed members of the pension board at Hastings.

Reports from several points in the state indicate that some of the smaller hospitals are in financial distress.

Dr. L. J. Kilian has moved from Blair to Wakefield to engage in practice, succeeding Dr. E. J. Fleetwood.

Dr. F. R. Ayer, McCook, has gone to New York to enter Manhattan hospital to take a special course in surgery.

It is announced that Dr. Wm. Green, formerly of Petersburg, has located at Laurel, succeeding Dr. P. J. Hermsen.

Dr. C. L. Hustead, Falls City, has been appointed county physician and county health officer of Richardson county.

From Sumner, Neb., comes the news that medical fees are to be reduced to compare with the price of farm products.

Dr. R. S. Mitchell, of Red Cloud, has decided to locate at Appleton, Wis., in association with Drs. Reeves and McLaren.

Dr. A. F. Tyler of Omaha was elected secretary of the American Roentgen Ray Society at a convention recently held in St. Louis.

Dr. S. A. Van Osdel, Johnson, is said to have invented and placed on the market a tonsillectomy instrument of considerable merit.

In an action against a real estate dealer for fraud in a transaction, Dr. Montgomery, Pickrell, recovered two hundred dollars damages.

The nurses of Nicholas Senn hospital were entertained with a musical program at the home of Dr. and Mrs. A. B. Condon recently.

Dr. Winfield Scott Hall, Chicago, gave a series of lectures on eugenics, social ethics and sex hygiene in Omaha during the middle of March.

Dr. M. A. Kani, Omaha, has returned from a seven months' trip to the devastated areas of Europe, and reports having seen terrible things.

Dr. F. W. Buckley, Beatrice, was elected vice president of the Nebraska conference of social workers at the recent annual session in Lincoln.

A suit for malpractice has been entered in the district court of Lancaster county against Dr. J. E. Thomson, the case involving a broken arm.

Dr. W. A. Hostetter, Omaha, had the unusual experience of facing a burglar's revolver in the hallway of his home on returning from a night call.

A Palmyra physician has been cited to appear in court to answer charge of the Head of the Bureau of Health, that he failed to report cases of small pox.

Rev. J. Luepke, for some months pastor of the Lutheran church at Cook, also a medical man, has moved to Iowa to engage in the practice of medicine.

Dr. W. R. Boyer and Dr. Paul J. Flory, Pawnee City, have become associated in the practice of medicine and surgery, with offices at the Pawnee hospital.

Dr. Victor Lenher, Professor of Chemistry, University of Wisconsin, gave a series of lectures at the University of Nebraska on "Selenium and Tellurium."

Dr. J. A. Henske of Omaha left for Boston the latter part of March, where he will remain for several months taking special work in pediatrics at Harvard.

Country doctors are finding it difficult to get hold of enough cash to pay the chauffeur, and the gasoline and repair bills, these days. Forty cent corn is to blame.

"The Effects of Proper Posture on the General Health" is the title of a lecture delivered at the Omaha Y. W. C. A. recently by Dr. R. D. Schrock, of that city.

Dr. Charles Rosewater, Omaha, has donated $20,000 to Smith college as a fund in memory of his deceased daughter, Irene, who was a graduate of that institution.

Three hundred ninety-three medical men registered at the clinical meeting of the Nebraska Section of the American College of Surgeons at Omaha the first days of March.

Drs. H. M. McClanahan, A. D. Dunn, B. W. Christie, and F. E. Coulter, Omaha, were elected to fellowship in the American College of Physicians at a meeting held at Baltimore recently.

A reunion and banquet of the medical members of Base Hospital Unit No. 49, was staged at Lincoln, March 12th. Base Hospital Unit No. 49 functioned at Allery, France, during the year 1918, and its personnel was largely Nebraskan.

The first reunion of the Creighton Medical College Class of 1896 was held in Omaha during the

Clinical Meeting of the A. C. S. Nebraskans attending were: Drs. J. D. Hammond, A. E. Mack, Thos. R. Mullen, Omaha, and Charles H. Breuer, Lincoln.

The president has appointed Dr. C. E. Sawyer, Marion, Ohio, his personal physician, and nominated him for the rank of brigadier general in the medical corps. The new appointee is to make a study of the welfare work of the country and is authorized to formulate suggestions for a concrete plan of coordinating government agencies for safeguarding the public welfare.

MARRIED.

Dr. B. F. Lorance and Miss Pearl Stevenson, Auburn, were married Feb. 17.

Dr. Charles B. Huestis, Omaha, and Miss Mary Bennett, Brooklyn, N. Y., were married in New York City, Feb. 21.

DEATHS.

Dr. Reinold Kantzler, aged 36, died at Ogden, Utah, Feb. 17, from an infection resulting from an ulcerated tooth. He was born at Kearney, graduated from Northwestern University, Chicago, and at one time practiced at Shelton.

Dr. C. A. Anderson, Stromsburg, State University of Iowa College of Medicine, 1897, died March 5th from cerebrospinal meningitis, aged 51. He had practiced medicine at Stromsburg for twenty-five years.

Dr. B. L. Paine, Lincoln, aged 67, died March 13. He was one of the earlier physicians of Lincoln, but for some years had not been in practice. He was the junior member of the firm of Miller and Paine.

MENTAL PATIENTS IN PUBLIC SERVICE HOSPITALS.

The congestion in the neuro-psychiatric hospitals of the United States Public Health Service throughout the country has been brought out by the necessity of transferring 30 military patients from the big Service hospital on Grays Ferry Roads, Philadelphia, to make room for other patients who had greater claims on its facilities. By the time the transfer could be carried out the hospital was again crowded to capacity. The service is now caring for 5910 neuro- psychiatric patients, and the number is steadily increasing. Search is being continually made by official and non official organizations for buildings that might be leased by the Service for hospitals. Such, however, have proved to be few and far between, and the necessity of building those needed is daily becoming more and more apparent.

It is the policy of the Public Health Service to provide for all neuro- psychiatric patients, in its own hospitals instead of in contract hospitals, but until proper buildings can be had this is impossible.

NEW AND NONOFFICIAL REMEDIES.

Procaine-Squibb.—A brand of procaine (see New and Nonofficial Remedies 1920, p. 29) complying with the N. N. R. standards. Procaine-Squibb is supplied as a powder, as hypodermic tablets Procaine-Squibb ¾ grains, and as solution tablets Procaine-Squibb 1⅛ grains. Squibb & Sons, New York.

Globules Benzyl Benzoate—H. W. & D.—Each gelatin capsule contains benzyl benzoate-H. W. & D. (see New and Nonofficial Remedies, 1920, p. 49). 5 minims, diluted with olive oil. Hynson, Westcott & Dunning, Baltimore, Maryland (Jour. A. M. A., Jan. 22, 1921, p. 245).

Salophen.—A brand of phenetsal complying with the N. N. R. standards. It is supplied as powder and as Winthrop tablets of salophen 5 grains. Winthrop Chemical Co., New York.

Salophen.—A brand of phenetsal complying with the N. N. R. standards. Morgenstern & Co., New York.

Cinchophen-Calco Tablets 7.5 grains.—Each tablet contains 7.5 grain of cinchophen-Calco (see New and Nonofficial Remedies, 1920, p. 225). Calco Chemical Co., Bound Brook, N. J.

BOOKS RECEIVED.

Principles and Practice of Infant Feeding. By Julius H. Hess, M. D., Cloth. Price $2.50. 2nd Revised Edition. Pp. 343 with illustrations. Philadelphia: F. A. Davis Company, 1920.

Practical Psychology and Psychiatry. By C. B. Burr, M. D., Cloth. Price $2.00. Fifth Edition. Pp. 269 with illustrations. Philadelphia: F. A. Davis Company, 1920.

The Wassermann Test. By Charles F. Craig, M. D., M. A., F. A. C. S. Cloth. Price $4.25. 2nd Edition Revised and Enlarged. Pp. 278 with illustrations. St. Louis: C. V. Mosby Co., 1921.

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CONTENTS

Page
The Cause of Failure After Operations for Club Feet, John Prentiss Lord, M. D., F. A. C. S., Omaha 129
Heat as a Method of Treatment of Cancer, James F. Percy, M. D., F. A. C. S., Galesburg, Illinois 133
The Acute Manic-Depressive Psychoses and Their Early Treatment, W. B. Kern, M. D., Professor of Nervous and Mental Diseases. Medical Department, University of Southern California, Los Angeles 135
The Treatment of Eclampsia, C. R. Watson, M. D., Mitchell, Neb. 138
Dangers in Childbearing—A Plea for Better Obstetrics, Earl C. Sage, B. Sc., M. D., Omaha 142
A Civilian Surgeon's Story of the Great War, H. Winnett Orr, M. D., F. A. C. S. Lincoln, Nebraska 144
Focal Infections in the Mouth, Fred W. Webster, D. D. S., Lincoln 147
Removal of Open Safety Pin from Oesophagus of Infant, B. M. Kully, M. D., Omaha, Nebraska 151
New Advertisers 151
Books Received 151
Editorial 152
Scientific Program, Annual Meeting, Lincoln, May 9-12, 1921 156
Vital Statistics of Nebraska,—Births and Deaths, 1919 and 1920 158
General Notes 159
Society Notes 159
About the Doctor 160
Married 160
Deaths 160

THE CAUSE OF FAILURE AFTER OPERATIONS FOR CLUB FEET.

John Prentiss Lord, M. D., F. A. C. S.

Professor of Orthopaedic Surgery, University of Nebraska College of Medicine, Omaha, Neb.

The reason for the selection of this subject is that a large proportion of my cases of club feet represent the failures of others, as well as my own, to give complete permanent results. In other words, the cases are too often recurrent ones. It is perfectly obvious that, because of the marked tendency of foot deformities to recur, every operator will have some of his cases stray, because of the proverbial tendency of parents to neglect the after treatment until more or less recurrence has taken place, when they easily and naturally drift into other channels.

Recognizing this inherent proclivity, as well as taking into account the factors of failure incident to the after care and supervision, my custom is to impress parents with the necessity of very close attention to this after care, supervision, correct shoeing and watchfulness for a long period. Indeed I find urgent necessity for this instruction, and to make the procedure practical it is my usual custom to charge a flat rate for the whole care and after supervision, which is to continue over a minimum period of two years. The parents then come to an understanding that the treatment is not ended with the operation, casts and braces, and that the responsibility is theirs as well as mine.

Failure to overcorrect adequately is the most common error. Many beginners start early to treat congenital cases by the use of casts, and, failing to get a full overcorrection, are apt to resort to continued pressure to force the feet straight. They seem to have been left off for a time. Of course re-angle, and it commonly happens that pressure sores have been produced and the casts have been left off for a time. Of course recurrence is rapid because it is but a step from the right angle position to one sufficiently vicious to quickly grow a crooked foot. An habitual faulty position brings recurrence sooner or later. Even the time spent in bed and relaxation during sleep—a period which represents one half of the child's life—with the weight of the bedding as an additional detriment has the effect of growing the feet crooked.

Also a common error is to graduate from casts too soon. We should bear in mind that better correction can be maintained by casts than by braces. There may be those who would differ with me in this, and I concede that it is possible to do as much with suitable braces continuously well adjusted, but, as a rule, as usually made and worn, braces are not comparable in efficiency to well applied casts. Growth and time are such large factors that the cast period should usually be not less than six months, assuming of course that pretty complete overcorrection has been made at the initial operation.

When the feet have been fully overcorrected by operation, and casts to the number of three to six, worn for about six months, braces should be employed to maintain the correction for a period of several months, after which, walking without the casts may be permitted during the day, but braces or efficient supports should be worn at night (Fig I) to maintain the corrected or overcorrected position. This practice will insure against the above mentioned recurrence due to feet growing crooked again because of growth during sleep, when they are relaxed and in a position of equinus or equino varus. This factor is quite sufficient to bring about the recurrence within a period of from one to five years.

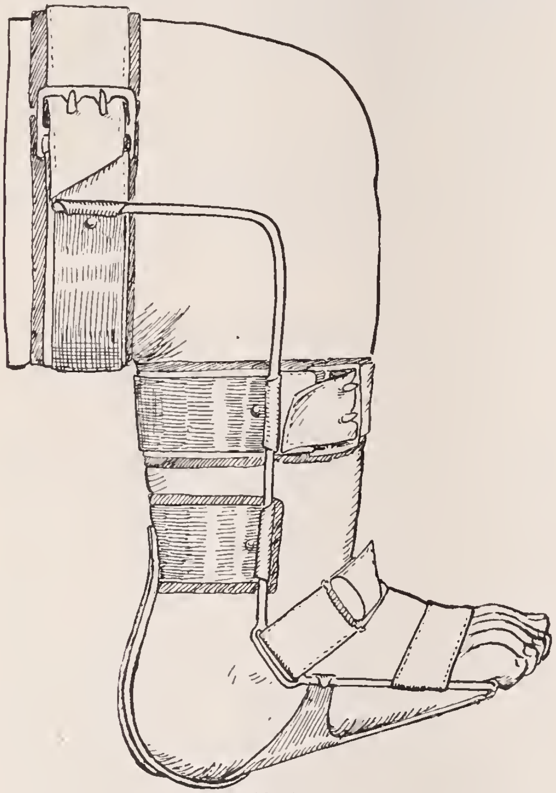
FIG. I.

It is a good practice to urge manipulation to maintain full flexion and extension, which practice is valuable in itself, and has the further advantage of maintaining the interest and observation of the parents. If improvement is not maintained, it is noted, and earlier attention given in cases of slow progress.

Keeping in touch for one or two years is particularly difficult when the people live at a distance. Braces become outgrown, ill-fitting or broken, and are discarded. Recurrences must be fairly well established before they are taken seriously. Then parents become discouraged and dissatisfied, and if there is an unpaid balance overdue, they are quite likely to try some other surgeon, return to the bracemakers appliance, or possibly follow the blandishments of the advertiser. If the latter courses are followed the time spent will contribute to a more fixed and permanent deformity. Thus we get an older class of cases, with aggravated primary conditions and secondary changes well marked, such as knock-knee, backward rotation of the fibula, anterior foot, etc. There are some cases of aggravated, resistent talipes equino varus, especially the older cases, which cannot be adequately or properly treated without more surgery than the usual fasciotomy, achillotomy and division of ligaments. Usually excision of the head of the astragalus will suffice. If the fibula has been forced too far backwards it is my usual practice to excise enough of the outer portion of the astragalus to remove any barrier caused by this portion of the bone. Bony barriers to reduction of deformity should, as a rule, be corrected by an amount of operative attack upon the bones necessary to enable one to get proper reduction without too great tension upon the soft parts. Indeed little constant force should be exerted. Manipulations and operation should not only correct but should overcorrect. The dressings should simply retain the corrections. Deformities thus wholly overcorrected and properly retained for a sufficient time to allow of consolidation of all of the tissues incident to growth and use, rarely recur and fail. It is the incomplete and imperfect operations that furnish most of the failures.

It should be recognized that there are some cases of congenital club feet that are a match for the best efforts of the most expert. If novices could recognize these it would, perhaps, save them much disappointment and absolute failure if they would wish them onto those who are looking for "hard nuts to crack."

In the more severe cases of talipes equino varus in infants, manipulative reduction should be reasonably thorough but it is usually a necessary and preferable practice to follow this with plantar fasciotomy and achillotomy to get the requisite overcorrection without the necessity of putting the feet up in plaster under strain and pressure, which causes not only great pain but a harmful degree of swelling, and possible sloughing and a resultant ulcer. These conditions necessitate removal of the casts, loss of the results anticipated and much loss of time, with a handicap added against further efforts, for a time at least.

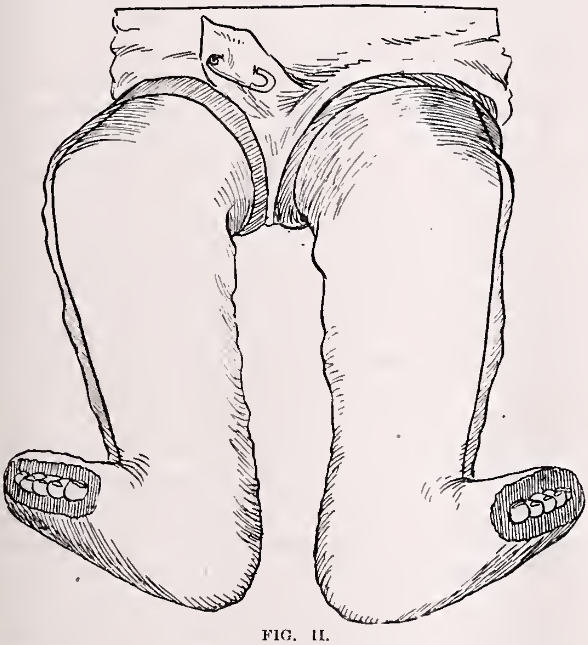

FIG. II.

Talipes equino varus of extreme degree in older children or adolescents requires considerable bone surgery, in addition to fasciotomies, achillotomies, capsulotomies, wrenching, etc. It is futile to expect results that are very appreciable by any or all procedures that may be done upon the soft parts alone. Although these are very necessary and helpful, the extreme bony deformities must be overcome by various forms of attack. One of the most common is wrenching, which is, in some feet, very useful; especially in slender weak feet in the younger class, and in those who may be older but whose deformities have been acquired from paralysis. In such feet the bones are atrophic and the soft parts more yielding. Force and tenotomies in these cases may suffice, but even so, the external malleolus is usually crowded still farther backwards to a harmful degree, and may become an increasing factor in causing failure in the ultimate result.

Experience has emboldened the writer to more frequent and freer attacks upon the bones and joints of the feet. The most common attack is in removing the head of the astragalus. Added to this is a removal of the outer fourth of the body, with also some erasion of the center of the body, if necessary, to secure the requisite amount of eversion to change sufficiently the center of weight bearing, thus to throw it inside the center rather than outside. In still more aggravated cases the removal of a wedge, of greater or less dimensions, is necessary to accomplish correction with sufficient completeness to eliminate factors of failure.

In addition to these measures, the older cases may require tendon transference as well as the complete removal of the astragalus. Unless all of the mechanical problems are met in the primary operation, subsequent failure may result.

It is necessary to qualify, however, because sometimes we are forced to leave full correction for subsequent wrenching and plaster, because the soft parts will not bear much tension, if thereby, the circulation and nerve supply is interrupted or too greatly reduced.

It has become practically a universal custom of mine to split the casts (while they are still moist) on foot cases. This practice greatly lessons the work in their removal. It also enables the surgeon to regulate the tension by prying apart the cut edges of the casts which may eliminate the necessity of their too early removal. Then, again, it is a great satisfaction to know that you may have the casts loosened by parents after instructing them to pry the cut edges apart by the use of a screw driver or other suitable instrument. It is my observation that this practice enables me to leave casts on, with safety, from one to two months longer. This advantage is especially noteworthy in those children who suddenly become fat.

It is practically an invariable custom to apply casts to the mid-thighs. (Fig. II.) This practice is quite common with experienced orthopaedic surgeons, but its value is often overlooked by beginners and occasional operators. Its first great advantage it that it prevents young and fat babies from kicking off their casts. Secondly it lessons the likelihood of pressure upon the dorsal surfaces of the feet. Thirdly it greatly adds to the efficiency of the casts in correcting the varus and pigeon toe, especially if pains are taken in moulding the casts so as to leave the feet in marked eversion at both ankles and knees.

The value of an experienced and efficient assistant is very great in holding the feet in the corrected position from first to last during the application of all of the dressings. A well moulded strip of plaster applied to the posterior surface greatly favors a good dressing. It adds to its strength; it prevents undue wrinkling; it leaves the anterior shell thinner than otherwise, and eliminates an undue amount of plaster across the instep where a harmful degree of pressure is apt to occur. The strip is best extended one half inch beyond the toes as a protection to them while creeping and in older children against stubbing them when walking.

Feet that have been operated on and reoperated on, and had repeated casts and braces,—a good index of their resistance to correction—in subjects of some age, say five to fifteen years, are resistant to ordinary operative measures. Operative attacks may have to include removal of the head of the astragalus and possibly partial, or even complete, removal of the body to render the correction as complete as necessary to eliminate all the mechanical factors of failure.

The paralytic cases of years standing, especially in adolescents and adults, represent a class of cases which require most thorough and complete surgical work to meet all the indications so adequately as to minimize to the fullest proneness to recurrence. Tendon transferences, formerly much vaunted, may be flat failures without astragalectomy and arthrodeses. When tendons are transferred careful estimates of muscle power, the time element, and all factors must be carefully weighed. The mechanism of the whole leg also must be taken into account. Flexion deformity at the knee (genu valgum) and outward rotation must be corrected by osteoclasis or by oesteotomies, which may have to be done to meet all of the indications for a successful club foot operation.

The transfer of the tendon of the tibialis anticus to the tendons of the peroneii is one of the more common procedures, and tendon transferences as indicated may be adapted to individual conditions. An astragalectomy, however, is now considered a more valuable procedure, and insures a more permanently stable foot.

In the adult operations for club feet may become almost major in character. No half way procedures will give results which are complete and free from the dangers of failures. These features embrace achilles lengthening, preferably the very long splice method; astragalectomy and advancement of the tibia and fibula upon the tarsus so placed in a properly prepared space as in a Whitman operation, excision of a sufficient wedge from the tarsus on the outer and upper surfaces to allow the foot to be straightened without tension upon the soft parts, and, in extreme cases, to facilitate a full correction of the varus, a division of the metatarsals near their bases.

Plantar fasciotomy is done regularily but is disappointing in very extreme cases, it being necessary to get correction by a free attack on the bones. Tenotomy of the posticus and the transfer of the tibialis to the outer border of the foot completes the extensive operative attack necessary to reduce this fixed deformity to the semblance of a normal foot. So treated there is no danger to the circulation, nor undue tension upon the soft parts. It is usually necessary, in most cases, to do osteotomies of the tibia and fibula near the knees, to correct the invariable knock-knee, also to alter the relation of the legs to the thighs to allow the feet to stand parallel, otherwise there is a very objectionable outward deviation of the feet, due to the rotated fibulae which, previous to the operation, were almost lateral to the achilles tendons. It is to be borne in mind that, after the Whitman technique, the head of the fibula rests at the calcaneocuboid articulation. To do less in cases of extreme character, as when the patients walk upon the backs of their feet, is to fall short of meeting the full indications for fully successful work.

HEAT AS A METHOD OF TREATMENT OF CANCER.

James F. Percy, M. D., F. A. C. S., Galesburg, Ill.

Disseminated heat holds, and will in a steadily increasing measure continue to hold, a high and certain place in the successful palliative and curative treatment of all forms of malignancy.

Accomplishment of the best results possible from this treatment in carcinoma, uterine or otherwise is being temporarily held in abeyance, as far as its most beneficent development is concerned, because of a misunderstanding of its correct application, due to the inexperience, oftentimes of those who want to be its friends but who have not yet learned the extreme limits of its possible application.

The variation in human tissue resistance to heat, as between muscles, nerves and especially blood vessels, is one of the signicant and remarkable results of the study and development of the practical application of heat in the destruction of cancer. Nerve structures and blood vessels second in relative order withstand the application of much more heat than do muscle fibers. This is a most fortunate fact because practically the cancer cell is very much less resistant than even the normal muscle fibres, and a degree of heat that will kill a cancer cell will not at the same time permanently injure those that are worth saving whether they be either nerve texture, blood vessels or muscle cells.

The application of the heat in the pelvis and lower part of the abdomen, through an abdominal incision, can be so manipulated and regulated that the ureters and important blood vessels are preserved, while the lymphatics and glands along these vessels and in the parametrium are destroyed. The fat in this region and in the parametrium can be heated until it is hot and liquid and will run and even boil. Yet if you do not for too long a time directly touch the vessels or ureters with the heating point you will not harm them, but you will, necessarily kill the cancer cells.

When you melt the fat on the iliac vessels and in the parametrium you are destroying not only the free cancer fragments but also the lymphatics with their load of malignant infection. You do not, therefore, indeed you cannot, autoinoculate cancer into uninfected areas as you do when you use the cold steel knife as in the Wertheim type of operation. But more important than all else, with the abdomen open, you can see and determine accurately when you have not done enough in the way of the application of heat. And this is the most important factor of all, in any technic. Again, if you do too much with heat you know at once and can also take means to repair it.

I mentioned above the cancer infection present in the lymphatics. Frequently we cannot see it, but its percentage is high enough to always demand consideration and treatment, even though it is not macroscopically apparent. Let me tell you for a moment how to treat the glands that are easily recognized, for in some cases they may be as large or larger than your thumb. Their treatment is comparatively easy. It is not always necessary to remove them but they should be thoroughly infiltrated by direct application with heat, in other words, made hot.

If they are left undisturbed after the application of the heat they will disappear. Their removal, however, after the application is made much easier because it loosens them from their inflammatory bed which often involves the large blood vessels and ureters. You can also be quite certain that you will not spill live cancer cells around should you decide to remove them.

With the glands of moderate size, if the heating point is applied directly to them they will frequently burst like a roasted chestnut. By this thorough application of heat you not only prevent reinfection but you destroy the lymphatic chain, and when you also tie the internal iliac and ovarian arteries, you thoroughly disorganize the lymphatic currents in the pelvis, preventing subsequent oedema and absorption, to say nothing of limiting metastasis.

What has just been stated are facts of tremendous importance. I here describe an essential and legitimate surgical procedure. It is one by which you are not required to work in the dark. And you use an instrument of comparative low cost and one, the physics and chemistry of which, you can comprehend and understand. You see directly the extent of your problem. You know how much you have to do and you can apply heat treatment in a definite surgical manner until it is finished, and you do not injure unnecessarily normal tissue anatomy, nor the course of general physiological activity, by the absorption of toxic products.

We all know that we cannot tell the extent of a gross mass of cancer by external examination, nor is its overgrowth or size any criterion of its potential malignancy. Our fault or mistake, if you please, in the presence of an advanced case, is that we usually throw up our hands and whisper to the family and friends: "Make her as comfortable as possible with morphine."

Cancer, little or big, untreated finally kills its host, while the most unfavorable case, as far as the appearance to the eye is concerned, occasionally gets well in a most incomprehensible manner, no matter whether the treatment is the knife, X-ray, radium, thyroid, heat or any of the other methods that might be enumerated. No one has especially called attention to this important fact, teeming as it does with a significance that we cannot now in the present state of our knowledge of the cancer problem fully comprehend.

A few years ago, Ewing, of New York city, in a personal statement to the writer said, "that the balance in cancer is easily upset."

It all means, as I see it, that the next important step in our unravelling of the cancer enigma will be for some laboratory seer to tell us why any method of treatment does sometimes apparently, "easily upset the balance in cancer."

The methods of producing the heat in the destruction of these growths is also important. Many of the electrical devices now used give a current that does more than spread heat through the areas involved in the malignancy. They give heat plus various forms of electrical energy. This, in many instances, devitalizes and destroys both the nerve and blood supply and so alters the normal cell that its function of repair is in the realm of the hopeless.

Microscopic study of these electrically treated areas surrounding new growths always show a chronic endarteritis, with an abundance of connective and sclerotic tissue not unlike that produced in wounds from high explosive shells and tissues exposed to the diathermic and allied currents, and to the alpha, beta and gamma rays. The explanation is not difficult. The human biped for untold centuries has been contending, not with electrical or chemical burns, but principally with varying degrees of heat applied to his body,—just plain burns. Burns of this character by ordinary fire, no matter how simple or how severe or destructive, have become a part of nature's problems, a part of the sum total of things and therefore stimulate only a reparative reaction.

Fire is one of the primordial elements that man and his tissues have learned to contend with along more or less successful biological lines. Out of it all he has learned to repair the insults and the damages to his tissues, by fire, in a way which, when finished by the natural reparative processes, is a remarkably good substitute oftentimes for the original pattern.

I have not yet fully determined how much danger the ureters are in from the intrauterine dissemination of heat sufficient to destroy the adjacent lymphatics with their possible and probable load of malignancy. This, however, is in process of constructive determination. Practically, however, I am quite sure that future work will show that the ureters can be classed with the blood vessels in their resistance to the application of heat. My experience also shows that the percentage of ureteral damage from heat is no higher than that in ordinary hysterectomy.

From what has been said so far we can appreciate that the dissemination of heat in the destruction of uterine carcinoma is something more than a mere local cooking procedure limited to the uterus, leaving uninfluenced by the heat technic adjacent cancer bearing tissues, more or less remote from the primary origin of the disease. If the heat technic in carcinoma of the uterus were only the broiling of the uterine muscle until it was thoroughly cooked in vivo, this method of treatment would not continue to arouse the active and hopeful scientific interest of so many American surgeons.

The more that we can do in the way of destroying the aberrant cells in the pelvis outside of the uterus the less we shall be compelled to talk about palliation in the treatment of carcinoma and the more we can expect results that will mean ultimate cures.

When it comes, however, to the excision of a gross mass of cancer, as in the breast, or the dissemination of heat where its application can be guided and controlled by the eye and the fingers, there is no instrument so far devised that equals, for this purpose, the present cautery which has grown out of an imperative demand for something which would give a larger volume of controllable heat, that was more durable and efficient than the cautery of the Paquelin type.

Because of the recent domestic disturbances in Europe, which interrupted my private work, I have been denied the time necessary to look up anew my statistics of the results of the heat treatment in inoperable uterine carcinoma. In 1917, however, I reported 15% of the utterly hopeless type of case, alive and well from two and a half to nine years following my heat technic. This was on a basis of 65 completely reported inoperable cases. But I am quite certain that when I can get home and review my operated cases which have come into the three year class since 1917 this 15% can be added to in an appreciably way.

The method here briefly outlined in the general treatment of accessible carcinoma offers more, I believe, than anything that so far has been developed especially in the treatment of carcinoma of the cervix from its incipiency to the inoperable stage which verily, is the Soul of Hell.

THE ACUTE MANIC-DEPRESSIVE PSYCHOSES AND THEIR EARLY TREATMENT.

W. B. Kern, M. D., Professor of Nervous and Mental Diseases, Medical Department,
University of Southern California, Los Angeles.

At no previous time in the history of medicine has the necessity for early and accurate diagnosis, care, and judicious handling of the acute and curable insane appeared more prominent than today. This need became apparent many years ago, but it seems that only within a comparatively recent period has the plan of doing something definitely and early for this large and increasing class of cases received serious consideration, engaging the attention of the physician doing general work.

Only a few years ago a new and interesting specialty, psychiatry, as a branch of the healing art, was introduced, and soon assumed important and definite proportions, and has today taken a prominent place among the specialties in medicine. For a number of years following its appearance comparatively little was accomplished; less in psychiatry than in neurology. However, within the past decade much important work has been done along the lines of diagnosis, care, and treatment of the insane, and particularly the acutely insane, so that today practically all medical schools have as a part of their curriculum a well equipped department or chair of neurology and psychiatry, and the physician doing general work seems more than ever interested in the problem of doing something himself, at least in the way of judicious temporary handling of such cases, if indeed not with a view to applying curative measures.

Some years ago the thought of treatment and recovery of an insane patient, whether acute or otherwise, received little or no consideration, the only aim being detention, as is unfortunately true today in too many state asylums, although this tendency it seems is being quite generally removed. It is a well recognized fact that many of the acute mental diseases are perfectly curable, and as in most other maladies, it is advantageous to have the diagnosis made and proper treatment applied promptly, hence much of this very early work must be done by the physician doing general practice, in other words the family physician, for he is the one who, of necessity, comes first in contact with these patients, being consulted by the family and friends, which is indeed the perfectly proper procedure.

One of the most common and interesting forms of insanity met is that class of the manic-depressive type, the history and classification of which was outlined by the interesting and helpful work of Kraepelin, who, following much active investigation, introduced many important and helpful features, this particularly true in his work upon the subject of acute mania, acute melancholia, puerperal insanity, and the circular insanity type. Following a prolonged, careful and painstaking research of these conditions, he learned that at some time during the course or progress of the disease, whether the patient be suffering from one or another of these maladies, symptoms of one or more of these several conditions presented, simultaneously or otherwise, hence the conclusion reached that acute and chronic mania, melancholia, puerperal insanity, and the previously well known circular insanity type, were, and are, one and the same disease, these several conditions being only different types of a single disease, or symptoms occurring at different periods during the course of a single malady. There not being at hand, or available and in common use, a suitable or desirable term under which these several conditions as a single disease might be grouped, Kraepelin coined the term manic-depressive psychosis, indicating the two prominent symptoms of the disease, and today the term is in common use, particularly among those interested in the specialty of nervous and mental diseases.

Manic-depressive psychosis may be defined as an insanity characterized by periods of exaltation and depression, occurring more or less regularly during the life of the individual, and without mental deterioration.

The principle causative factor in the development of this disease is recognized as being at least very largely that of heredity. It is noteworthy, as stated by White, that "the disease is often found in families the constitutional condition as the basis on which it develops appearing to be directly transmitted." Also it seems reasonably safe to assume that upon the basis of an unstable nervous system, one possessing definite lack of resistance and recuperative powers due to a bad heredity, or otherwise, that various exciting causes such as stress, anxiety, habit of rapid living, and beyond the normal gait, prolonged emotion, either pleasant or otherwise, bodily or mental fatigue, mental shock, etc., in such individuals may be entirely sufficient to precipitate a primary or recurrent attack.

Manic-depressive insanity is a disease of early life, the vast majority of primary cases developing between sixteen and thirty, some writers placing this percent as high as eighty or eighty-five, although it is a well known fact that not infrequently acute primary manic-depressive cases do appear much later in life.

While the various phases of manic-depressive insanity are classified under several heads, namely; the manic phase, a mixed form of the disease, the depressive phase, puerperal insanity, and several others, yet this may with reason be limited to the manic and the depressive phases, with always the thought in mind that a mixed type, or a type more or less irregular may appear.

The essential symptoms presenting in the manic phase are first, flight of ideas; second, psychomotor excitement; third, emotional exaltation, which symptoms may appear in any degree of severity, ranging from a very mild condition to a marked maniacal, boisterous and unmanageable insanity. In the patient suffering from the depressive phase the reverse of these symptoms appear, namely; difficulty of thinking, speaking, action and motion, definite psychomotor retardation and emotional depression. In this as in the manic phase, these symptoms may appear in any degree of severity. It is also true in this, as in the maniacal form, that the symptoms may not all vary proportionately. For example, the retardation may be quite out of proportion to the depression, or vice versa, and yet in no sense affect the general symptomatology upon which the diagnosis is based. The manic phase seems rather the more common of the two. It is certainly true the manic phase is more readily observed and receives more prompt consideration, care and treatment, for the individual suffering from the depressive phase may go along for an indefinite period if the disease appears very mild, as is not infrequently the case, without attracting special attention. It is always well to have in mind, in cases of the depressive type, the possibility of suicide. In fact the rule that "all depressive forms of insanity are potentially suicidal cases" may in a sense be overstretching the point a trifle, and yet after all, this is a rule well worth bearing in mind, since it is certainly better to err upon the safe side.

The disease usually sets in promptly, appearing in a person whose previous mental and physical habits have been good. This comes unexpectedly, showing early more or less marked flight of ideas, psychomotor and emotional excitement, possibly mild hallucinations of hearing or sight, or both, and often a loosely connected system of delusions. The reverse is true in the depressed phase, difficulty of thinking and acting, psychomotor retardation, emotional depression, and frequently an irresistible weeping tendency, often some disposition upon the part of the patient to the belief that something in her conduct, or in her past life, and for which shortcoming she is personally responsible, is accountable for the onset of this affliction. Here as in the manic phase, may be found hallucinations of sight or of hearing, or both, with more or less marked depressive and loosely connected delusions. These symptoms in each phase may be supplemented by insomnia, lack of disposition to take nourishment, some early loss of weight, dry skin, normal or subnormal temperature, constipation, retarded eliminations, an increasing tendency to untidy habits, and in a certain percent of all patients suffering from either the manic or depressive phase, a persecutory delusional tendency, though this may be slight. These symptoms appearing in any individual, and particularly in one during the period of early adult life, would be entirely sufficient to base a reasonable diagnosis of manic-depressive insanity.

The question of the differential diagnosis between this disease and dementia praecox is always important. Reasonable familiarity with the mannerisms, hysterioform attacks, stereotypy, verbigeration, negativism, dementing tendency, clammy extremities, awkward and constrained attitude, a disposition to be out of friendly touch with others, and a history of, or disposition to seclusion, the so-called "shut-in" life, symptoms common in dementia praecox and very slightly if at all observed in manic-depressive insanity, is usually sufficient to enable one to clear up any existing doubt. Not infrequently however the differential diagnosis between these two conditions is extremely difficult, requiring considerable delay and observation before this can be definitely and safely determined, and yet ordinarily a reasonably accurate conclusion should be reached. There is prevalent, too commonly so, a disposition to make an offhand diagnosis of dementia praecox in most young adults who develop an insanity, especially depressive forms, probably because it is known to be a disease essentially of early life. Such an error if possible should be avoided. If a patient is unquestionably suffering from dementia praecox, this may as well be known early. It is however a serious matter to pronounce a diagnosis of dementia praecox in any given case, and should never be done until an undoubted conclusion has been reached. Certainly if a given case is of the manic-depressive type, it is important that it be known early, particularly so if the best and most promising course is to be instituted.

Unfortunately there is as yet no specific line of treatment to be pursued, and yet there are many dependable things to be done for this class of cases, and these should be pursued early and industriously. The patient should be placed under quiet, agreeable and pleasant surroundings, and a treatment at once instituted that will bring about free elimination by way of the skin, the kidneys, and the bowels. This is best done in so far as the skin is concerned by judicious hydrotherapy. It is far better of course if such a patient can be placed in a good hydrotherapy department of a sanitarium where a continuous bath over a period of an hour, or an hour and thirty minutes may be had daily, preferably in the forenoon, administered by a competent hydrotherapy operator, and yet on the other hand, such sanitarium care is not absolutely necessary in so far as starting early treatment is concerned. A bath tub in any home can be made to answer temporarily. The essentials in such a procedure are to place the patient in the bath in a perfectly comfortable way, to maintain the temperature of the bath as nearly absolutely fixed as possible, say ninety or ninety-two (90 or 92) degrees fahrenheit, to cover the tub with a canvas, preferably a fourteen (14) ounce ducking, or other suitable material of sufficiently heavy texture that as much of the steam and heat as possible be retained thereunder, this helping greatly in the endeavor to hold the temperature of such a bath evenly and as nearly fixed as possible; to support the patient's head comfortably upon a rubber air ring, or in the absence of such rubber air ring, upon a folded bath towel or other improvised support serving as a suitable and comfortable rest for the patient's head. Such a patient if of the manic type may be given a hypodermic injection of morphine, preferably when entering the bath. By the time such a bath has been continued to its completion, the patient, if maniacal, will probably have quieted down very greatly, so that she may be removed to a bed in a quiet and restful place where she may be easily cared for and permitted to rest as long as this is possible, often several hours. Many such patients, worn out bodily and mentally, are, following this procedure, very greatly quieted and improved, and many ordinarily mild cases soon show evidence of being well started upon the road to recovery. It is always important to keep close watch upon the patient's pulse, heart action and general condition during such a continuous bath.

If the patient happens to be of the depressive type she is not likely to require the morphine, yet the continuous bath, maintained at an even temperature, the prolonged rest following such a bath, the free catharsis, etc., is required. In addition such patients all require some stimulation of the kidney secretion, and this may be brought about by the free drinking of water, or by the use of a moderate diuretic. These things, if the patient is to have the best that can be done for her at home or in private hands, must be continued daily. Exercise, occupation, or employment, to the point of fatigue, in this class of cases, should be avoided during the early period. In the patient suffering from dementia praecox such a plan may be admissible, but the acute manic-depressive cases require rest and relaxation. A liberal nourishing diet is essential, and a good pleasant tonic is often helpful.

If judicious hydrotherapy is continued regularly each day during the acute and early stage, preferably in the forenoon and extending over an hour or an hour and thirty minutes, the patient to have quiet, relaxation and rest for at least two hours or more following such a bath, the need for general restraints will be greatly lessened in the maniacal or disturbed cases.

This, in a general way, outlines perhaps the best method today of caring for this class of acute patients, and many, especially in mild cases, if this plan is inaugerated early, continued industriously and judiciously, very many of these cases will recover at home and in the hands of the family physician, and certainly if the case does not do well, and it seems desirable a little later to place her in the hands of a physician doing nervous and mental diseases exclusively, and in a well equipped sanitarium, the patient's condition is at least rendered much more favorable by this early procedure.

THE TREATMENT OF ECLAMPSIA.*

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In order to treat any morbid condition rationally, it is necessary to have a more or less clear conception of the cause and the course of the morbid process, since, otherwise, treatment must become merely symptomatic, and be entirely palliative, rather than curative.

Eclampsia is recognized today as one of the toxemias of pregnancy, the clinical course and the widely disseminated pathologic lesions which are found at autopsy both tending to the same conclusion. The fact that eclampsia is limited in its occurrence to the pregnant state inevitably forces the conclusion that the particular toxin, or group of toxins, which is responsible for the pathologic conditions, must in some way depend for its production on the fetal development and cannot be due to external conditions or infections.

These toxins must arise, then, from one of three sources. They may be due to faulty maternal metabolism, with accumulation of the abnormal products in the circulation; to abnormal conditions of the placental site, as, infection; or they may be waste products produced during the development of the ovum, and pass into the maternal economy through the placenta.

That faulty maternal metabolism is not the source of the toxemia would seem to be proven by the facts that eclampsia is limited to the childbearing state, and that the removal of the products of conception, or the death of the child IN UTERO, gives almost immediate relief from the severe symptoms in a large proportion of the cases.

Infection or other abnormality at the placental site may be eliminated for the same reason, since, if the placental site—i. e., the uterine wall—were the seat of the morbid process, the absorption of the toxins could hardly be shut off promptly enough to give the marked change we see in at least one-half of the cases.

We are, therefore, forced to the conclusion either that eclampsia is a toxemia arising from the absorption of products of fetal metabolism in excess of what the maternal channels of excretion can eliminate, producing an intoxication from an overwhelming dose of toxins, or that an accumulation of toxins occurs owing to the lack of proper excretion of a dose of toxins which should ordinarily be cared for. That both of these conditions may occur would seem to be proved by clinical observation, since we see, on the one hand, the eclamptic attack developing suddenly out of a clear sky in a patient who has shown no previous signs of toxemia, and in whom the urine drawn from the bladder after the onset of the attack is free from albumin and contains a normal percentage of urea, proving that the intoxication was of sudden origin; while, on the other hand, the symptoms of the toxemia may have been present for days, or even weeks, according to the history in neglected cases, before the onset of convulsions. The happy outcome of a prompt application of treatment, aimed at the elimination of the offending toxins, in a large majority of the cases that develop threatening symptoms, proves that in many cases at least the intoxication is due to an insufficient excretion, rather than to an overwhelming dosage of the toxins, although a sudden increase in the absorption may at times apparently seem to prove the futility of all prophylactic measures in preventing the disease.

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The next point to be considered is what effects the toxins produce. In a general way all cases of eclampsia may be divided into two groups—hepatic and renal—according to whether the liver or the kidneys are most prominently affected. The distinction is probably a difference in degree rather than in kind, or else we are dealing with two distinct toxemias and are trying to classify them under one heading. The more severe cases—i. e., those which come to autopsy—show almost invariably the characteristic liver lesions described by Schmorl. These lesions may have been associated with symptoms during life, such as jaundice and tenderness over the liver, or there may have been no symptoms pointing to the liver involvement. The less severe cases belong to the renal type, are seldom fatal if properly treated. and are characterized by a group of symptoms closely analagous to those of renal insufficiency. A close analysis of the two classes of cases and a comparison of the results of early treatment with those of late treatment give definite reason to believe that the two types of cases differ only in the severity of the toxemia, and the hepatic cases develop either when the system has received an overwhelming dose of toxins at the start, or when the early stages of the toxemia have been neglected.

The effects of the toxins are those of a strongly irritant poison, acting both on the nervous centers and on the tissues themselves.

The irritation of the cerebral and spinal centers results in the convulsive attacks, and in stimulation of the vasomotor centers to the degree that the excretory organs practically suspend their functions for the time being, owing to lack of material to excrete; while the direct irritation of the tissues is shown by the appearance of the albumin, blood, and casts in the diminished urine, and by the pathologic lesions found at autopsy.

The great dangers to the patient come from failure of the circulatory mechanism, due either to the direct violence suffered by the heart during the tremendous changes in blood pressure, induced by convulsive attacks; to the exhaustion which may follow the extra amount of work thrown on the heart by the overaction of the vasomotor system, or to the rupture of some cerebral vessel during the convulsions.

The direct treatment of eclampsia must be devoted to the following objects: 1. Removal of the source of toxemia. 2. Relief of the heart by stopping the convulsions, and by relaxing the vasomotor spasm. 3. Securing the elimination of the toxins in the system. 4. The support of the patient until the desired results have been accomplished.

TREATMENT.

Before considering the curative treatment of eclampsia, a brief consideration of the prophylactic treatment is in order, because there seems to be no question that in the large majority, if not in all, of the patients who show signs of a beginning toxemia the development of eclampsia can be prevented by prompt and efficient treatment.

The prophylactic treatment may be briefly summarized as the prevention of any accumulation of toxins in the system, combined with the ordinary hygienic measures to maintain and improve the patient's general condition. The routine is simple, and not burdensome to the patient, and its principal object is the maintenance of free action of the excretory organs.

The bowels should be kept thoroughly open, and a diet should be advised with this object in view, the free use of fruit being especially to be recommended. Failure of nature in this respect should be met by the daily use of such of the mild cathartics as may be necessary, combined with the ingestion of large quantities of water, at least several glasses being taken between meals. The efficiency of this treatment may be distinctly increased by the periodic administration of calomel, followed by a saline purge, once in three or four weeks, thus cleansing the intestinal tract and preventing the accumulation of any large amount of waste products.

The urine should be carefully examined at frequent intervals, and suspicious signs should be met at once by a thorough flushing out of the system.

The appearance of albumin in a catheter specimen calls for increased watchfulness, and the development of signs of renal irritation for rest in bed, liquid diet, and a thorough elimination of the offending toxins.

The skin should be kept active by the use of daily baths.

The general condition of the patient should, of course, be attended to throughout pregnancy, and the attendant should be at pains to assure himself that the patient gets plenty of fresh air and such exercise as is suited to her individual needs and habits.

It is a matter of common experience that eclampsia is distinctly less common among women who are under competent observation throughout pregnancy, and there is little doubt that, although it may be impossible to prevent the cases due to the sudden absorption of an overwhelming dose of toxins, the great majority of the cases can be prevented by careful prophylaxis.

The appearance of convulsions calls for the immediate application of the most radical treatment, since it is in late cases that most fatal results occur. Treatment to be efficient must have four distinct objects in view: 1. Prevention of further absorption of toxins by removal of the cause. 2. Limitation of damage by the toxins already in the system. 3. Elimination of the toxins. 4. Treatment of the patient as distinguished from the treatment of the disease.

1.—PREVENTION OF FURTHER ABSORPTION.

Although not susceptible at present of direct proof, there seems little doubt that the toxemia is due to accumulation in the maternal system of waste products from the child, and the inference is clear that absorption can only be prevented by the immediate emptying of the uterus. My own experience with the treatment has convinced me that delay while attempting to suppress or limit the effects of the absorbed toxins simply serves to detract from or absolutely to destroy any chance of recovery that the patient may have. The observations of various writers lead to the conclusion that a large proportion of the so-called hepatic cases of eclampsia follow delay in emptying the uterus, while, on the other hand, the marked symptoms which follow accouchement force in the majority of cases certainly indicates that the earlier the operation the better the patient's chances, although a considerable proportion of cases, slight or moderate in degree, will undoubtedly recover under purely medical treatment.

The method of operation to be employed in delivery must be adapted to the needs of the individual patient, but, in general, it may be said that the most rapid operation which is consistent with the safety of the patient is the most efficient. Mechanical dilatation of the cervix and immediate delivery has given satisfactory results in my hands.

Cesarean section I believe to be unnecessary, except in cases which present the absolute indication, since I believe that an abdominal operation on a patient whose excretory functions are already paralyzed by an overwhelming toxemia is irrational, and adds to rather than detracts from the dangers already present. The slower methods of dilatation tend to increase the tendency to convulsions, and are never to be advocated.

Unnecessary laceration and surgical shock are, of course, to be avoided, but a moderate amount of postpartum bleeding is to be encouraged, the loss of from sixteen to thirty ounces of blood being of distinct benefit to the majority of patients.

The attempt to treat eclampsia without preventing the further absorption of toxins is irrational, and the fact that a fair proportion of the cases recover without operative interference should not influence the treatment, since more lives will be sacrificed by the delay in applying active treatment, and thus exposing the patient to the constantly increasing action of the toxins than will be lost in operative delivery.

The fact that the prognosis is better in postpartum eclampsia than in the antepartum type and the beneficial effects which commonly follow the delivery certainly support this view.

2.—LIMITATION OF INJURY.

The most important step in the treatment of eclampsia next to removing the source of the toxemia is to limit the damage which the toxins already absorbed can do. It is generally conceded that, next to the pathology in the internal organs arising from the direct action of the toxins on the tissues, the greatest danger to the patient lies in the effect of the convulsions on the heart and in favoring cerebral hemorrhage, and the inference as to treatment is clear that the convulsions must be controlled until the toxins in the system have been eliminated.

The most efficient method of controlling the convulsions I have yet found consists in the subcutaneous injection of morphine, ¼ grain, in combination with the hydrobromate of hyoscine, 1-100 grain. The morphine may be repeated twice or three times at hourly intervals, as may be necessary, and the hyoscine once or twice, according to the condition of the heart.

The effect of hyoscine as a powerful spinal sedative renders it exceedingly valuable in these cases, not only in controlling the convulsions, but in relaxing the vasomotor spasm, and thus favoring excretion of the toxins, but the effect of each dose on the heart must be carefully watched owing to its depressant action. However, in these cases its action in relaxing the vasomotor spasm relieves the strain on the heart to such a degree that in favorable cases the depressant effect is almost abolished. The sedative action of morphine is too well known to require further comment.

After the acute stage is passed the sedative treatment should be continued by the free use of chloral until the appearance of free excretion shows that elimination of the toxins is going on, and that recurrence of the convulsions is unlikely. In many cases choral acts well without the use of morphine and hyoscine, but in others its action is slow and uncertain and the subcutaneous use of the sedatives is more satisfactory.

The use of chloroform or ether during a convulsive attack to lessen its severity is seldom or never productive of good and may do harm.

Owing to the spasm of the respiratory muscles which develops during a convulsion it is hardly possible that sufficient anesthetic could be absorbed to affect the individual convulsion, and by the attempt to administer the anesthetic the small supply of oxygen which the patient can inhale at this time, the urgent need for which is shown by the congested or cyanotic facies, is cut off.

The administration of oxygen during the convulsions is strongly to be advised.

3.—ELIMINATION OF THE TOXINS:

Thus far the treatment has been directed to stopping the increase of the toxins in the system and to limiting the damage they may do, and the next point to be considered is the elimination of those already absorbed. In the eclamptic patient excretion is almost at a standstill, and the excretory organs seem to be paralyzed. This condition seems to me to have a double origin. The irritant effect of the toxins in the blood, on the one hand, and a condition analagous to vasomotor spasm induced by the irritation of the spinal centres on the other, combine to check excretion; and both must be relieved to render treatment efficient.

The irritant action of the toxins on the organs themselves is best minimized by the free use of normal salt solution, given either subcutaneously or directly into a vein, in appropriate cases, to the point of toleration. This serves to dilute the toxins in the blood, and, combined with venesection, affords an efficient means of reducing the irritating action of the toxins by dilution. In cases which present marked edema, or in whom the heart action is very weak, the effect of the saline infusion must be watched carefully in order not to flood the system and increase the tendency to pulmonary edema. An initial dose of two quarts is usually well borne in any case, and it should be repeated according to indications. Bleeding is often of great value even in cases where the pulse is poor, the removal of from sixteen to thirty ounces being often followed by distinct improvement both in the symptoms and in the strength of the heart action.

The dilution of the toxins in the blood combined with the sedative action of the morphine and hyoscine on the spinal centres, is usually efficient in relaxing the vasomotor spasm and starting excretion, but the hypodermic use of nitroglycerin is also to be advised, since it acts as a direct vasomotor dilator.

The intestinal tract is the most important channel for the excretion of the toxins, although a considerable amount is eliminated in the urine; the action of the skin is comparatively insignificant. If the patient is unconscious and cannot swallow, or is under ether at the time of delivery, the introduction of one or two ounces of a saturated solution of epsom salts into the stomach by a stomach tube will usually result promptly in copious watery discharges, though drop doses of croton oil may be necessary to accelerate the action of the salts. This action, combined with a free injection of normal salt solution, results in washing the toxins from the blood and tissues into the intestines and rapidly removing them from the circulation. The urinary secretion is best stimulated by the repeated use of the saline infusion, followed later by the ingestion of large quantities of water or cream of tarter water, when the patient is able to swallow.

The skin requires no special treatment, as sweating almost invariably starts up spontaneously when the other organs begin to act. Probably more patients have been sacrificed by well-meant attempts at forcing the skin action by the use of pilocarpine and hot-air baths, resulting in cardiac exhaustion, than by any other method of treatment.

The old rule that the patients who sweat may recover, while those who do not sweat die, still holds true, since the appearance of free sweating announces the relaxation of the vasomotor spasm and the establishment of free excretion by all the emunctories, but sweating alone will not cure the patient.

The hot pack is harmless and soothing for a restless patient, but the hot air bath and the hot water bath are dangerous as well as useless.

4.—TREATMENT OF THE PATIENT.

It must never be forgotten in the treatment of a condition of such severity as eclampsia, and one which requires such radical treatment, that the danger exists of treating the disease at the expense of the patient, and that we may at any time be called upon to treat the patient for surgical shock or for failing heart action; that in any case our efforts may have to be directed principally to attempt to revive the failing heart action, while in certain cases radical treatment is unwise on account of the surety that it will kill the patient. In such cases the treatment must be directed to the patient's general condition, and the disease allowed to care for itself. Free stimulation should be used whenever necessary.

5.—AFTER CARE.

For some days after recovery from an eclamptic attack the patient should be kept on a liquid diet, so as to throw as little strain as possible on the overworked excretory mechanism. Absolute quiet and freedom from care are imperative, and free excretion should be maintained. Sedatives and stimulants should be used as indicated. Nursing is permissible if the condition is satisfactory after the third day.

DANGERS IN CHILDBEARING—A PLEA FOR BETTER OBSTETRICS.

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Even in this twentieth century more women between the ages of fifteen and forty-five years die from causes incidental to child birth than from any other cause except tuberculosis.

1. For the year 1919, the Metroplitan Life Insurance Company (1) completed statistics from information gathered from the health officers of all the states and larger cities having reliable birth registration, and made the following deductions:

(1) More than five women die from disorders of pregnancy or child-birth out of each 1000 births registered; this being equivalent to one maternal death out of every 185 confinements.

(2) The loss of life is still greater, when we find that forty-five babies out of every 1000 births or one out of every twenty-two are born dead.

(3) Forty babies out of every 1000 born alive die before they are one month old.

Dr. Ritter (2) of Kansas City has pointed out that government records compiled from sixteen nations show that the United States is fourteenth in mortality due to childbirth and its complications. Or to put it differently it is safer to be a mother in 14 imporant foreign countries than here in our own country. The maximum death rate in Spain was 19.6% in 100,000 births; in America 14.9% in 100,000. The lowest rate was in Sweden, 6% in 100,000.

When we consider that 60% of all labors in the United States are attended by ignorant midwives or physicians, who have but little regard for surgical cleanliness, it is not surprising to know that infection is the chief cause of death. To visualize this look over the figures of the obstetrical statistician for the Metropolitan Life Insurance Company. We find that of all holders of policies, Maternal Mortality is the highest; i.e. 68.4% in 100,000 cases and the causes are recorded as follows: Septicemia 42%; Toxemia and Eclampsia 26%; Accidents of Labor 10%; Hemorrhage 8%; Abortions and Miscarriages 10%; Miscellaneous causes 4%; total 100%.

These percentages agree very closely to those compiled by Sir Arthur Newsholme (3) in England. Of the total mortality due to pregnancy and parturition the proportion due to the different causes is approximately as follows: Puerperal sepsis 31.7%; puerperal albuminuria and convulsions 21.6%; puerperal hemorrhage and other accidents of childbirth 25%; other puerperal conditions 10.4%; accidents of pregnancy 10.8%: total 100%.

When we compare such a condition with women who have received prenatal and maternity care under skilled direction we find that only

(1) two instead of five die out of every 1000 confinements.

(2) only 12 babies instead of 45 are still born in every 1000 confinements.

(3) Only 10 babies instead of 40 per 1000 born alive die under one month of age; these results being attained in Boston, New York City, and elsewhere. We can now see how imperative it is that adequate nursing and medical care become available to women during pregnancy, at confinement, and during the first month of the infant's life. The fetal and maternal mortality is appalling as you see.

Investigations of the Children's Bureau brought out the fact that in the last fifty years there has been no diminution in the number of deaths of mothers in childbirth. This is a serious charge to bring against the medical profession. During recent years the mortality in typhoid fever has been reduced from 46-17% in 100,000 cases; diphtheria from 97-18%; tuberculosis from 250-147%; pneumonia 186-132%. One reason for the lessened decrease in maternal mortality and morbidity is due to the fact that many of the medical profession and laity have always persisted in considering childbirth not as pathological, but as merely a perfectly normal physiological process.

I wonder if we realize that in 1918, 23,000 mothers died from causes connected with childbirth and 250,000 infants perished; a combined mortality equal to our total casuality list during the war, which according to the latest government reports shows that 34,625 were killed in action; 215,489 were wounded and of this number 13,955 died; giving a total of 250,114.

Every year in the United States more than two million women submit themselves to a contest with death in bringing children into the world. "Inasmuch as woman makes the most important contribution made by any class of society to the state, should not the state make such provision as would secure to her and her offspring, the future citizens, the greatest possible degree of safety? Is the function of the replenisher of the forces of the state less worthy than that of the protector of these forces?" Such questions are put in Dr. Mary Sherwood's article on Newer Ideals in Obstetrics.(4) Casualities of the war are accurately recorded and scientifically treated under government responsibility, casualties of motherhood are casualties indeed, chance deaths, accidental injuries, for which there is none but individual responsibility, for which many times there is no care or treatment beyond that afforded by the family purse. To a meager purse may be traced many of the fatalities and injuries that face mothers in bringing children into the world. For the casualties of the war the United States provides free surgical care of the most expert, experienced and scientific sort. For the casualties of motherhood the government assumes no responsibility as yet. Mothers must pay for their own surgical care. Here in this community we are fortunate in having the University Hospital where provision is made for the great middle class of people who are unwilling to receive charity and who cannot afford to pay full hospital rates. According to their earning capacity these people can help pay for their care—the charges being from $1.25 to $2.50 a day. I regret to say that more of them do not take advantage of the opportunity—however, they will in time as there is a growing willingness on the part of the expectant mothers of all classes to go to the hospital. So those of us who are interested in safeguarding the lives of mothers and their newly-born children, can accomplish our purpose more speedily and effectively by giving publicity to the facts, and by insisting upon the institution of radical reforms in the teaching of obstetrics in our medical schools and upon the improvement of medical practice. Women's clubs and women's publications must be utilized in spreading a knowledge of facts about obstetrics; Medical Journals and medical societies must do their share. This is a field in which everyone may earnestly begin to work.

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A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

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Improvement in the civilian practice of surgery can be brought about by a more general recognition of the lessons of the war. The death rate, from disease and wounds was much lower during this war than in any preceding one. Not only that, but the return of wounded to duty was one of the astonishments of the entire military experience. We do not have accurate figures as to the return of industrial wounded to duty. I venture to assert, however, that for wounds of similar character the degree of crippling and the length of disability for our industrial wounded is more than twice what it came to be in the military hospitals of the American Expeditionary Force in France.

How this hospital efficiency came about is what the writer of this story desires to record. It is rather expected—perhaps even hoped—that the statements made here will arouse some discussion. Nevertheless, it is intended to set things down as they appeared to me at the time and since.

The writer of these pages has now been engaged in the practice of medicine and surgery—as a graduate—for 22 years. There were seven years of University training—and a sort of medical apprenticeship before that. After five years of general practice (fairly extensive) the study of Orthopedic Surgery was begun in Chicago under the direction of Dr. John Ridlon (to whom I am indebted for much help in many ways). From that time (1904) until the beginning of the war, I had devoted all of my time to orthopedic practice and to the development of what Sir Robert Jones calls an "Orthopedic Conscience." Orthopedic surgery had come to mean the prevention as well as the relief and cure of disability and deformity. Also it came to mean opportunities for relief and cure where the patient himself had given up hope.

In 1914 came the war. During its first year the orthopedic work in France, of Dr. Robert B. Osgood of Boston and Dr. Nathaniel Allison of St. Louis stirred my imagination. One knew that there must be much deformity to prevent and correct. With my family of five, however, and a far from certain financial position, it seemed quite out of the question for me to think of embarking upon a foreign military excursion.

In the summer of 1916 both the American Orthopedic Association (of which I was then secretary) and the Orthopedic Section of the American Medical Association appointed committees on preparedness. We were expecting American participation in the war. Dr. Ralph R. Fitch, former Secretary of the American Orthopedic Association, and Mrs. Fitch had gone to France in 1914 and were operating their own hospital. Dr. Joel E. Goldthwait of Boston, was made chairman of both preparedness committees, and with the foresight and energy for which he has since become universally known, he began to prepare for orthopedic participation in the war.

In the winter of 1916 the Central States Orthopedic Club met in Cleveland and Cincinnati; Dr. E. G. Brackett of Boston came out and spoke to us on the orthopedic work of Sir Robert Jones in Great Britain. Sir Robert had been made Director of Military Orthopedics for Great Britain and Ireland. He was undertaking the establishment in each of the British Military Hospital areas, of Orthopedic centers. There were neither trained surgeons nor surgeons to train to staff these proposed centers. Dr. Ridlon eloquently seconded Dr. Brackett's appeal for some of the Americans to volunteer. Even more than on the former occasion I was stirred to go. But the obstacles seemed insuperable. When America entered the war, however, in the following April, the call came in direct form and I decided at once that it was time to respond.

The British Commission that came over immediately upon our entrance into the war, brought a request from Sir Robert Jones for twenty orthopedic surgeons to be sent to Great Britain. Dr. Goldthwait immediately accepted a commission as Major and set about the organization of the first Goldthwait unit. This unit was organized at once from volunteers by telegraph. The unit met in New York, on May 17, 1917, and sailed on the St. Paul, the next day.

This unit like the earlier hospital units, was got together and sent out under the auspices of the Red Cross. Col. Jefferson R. Kean was acting as director at this time.

Plans for the departure of the unit were not complete until about May 15. I left Lincoln at 4:30 that afternoon (Thursday.) I left with many misgivings. I had been in practice in Lincoln for 18 years and was leaving my own family as well as my parents behind. The opportunity for important service, however, seemed very great. The British were asking for help and one could foresee that the American need might be considerable before the war was over. I speak of this because of certain situations to which I shall wish to refer later.

I arrived in Washington at nine o'clock on Saturday morning. Major Goldthwait and eighteen members of the unit had gone to New York the evening before. With a letter of instruction from Major Goldthwait and the help of Capt. C. R. Metcalf of Concord, N. H., (to whom I shall always be very grateful) I got my Commission (as Captain) and drove about town and out to Walter Reed Hospital, collecting my outfit. Washington as I saw it at that time was in tremendous confusion. I was told at first that it would be quite impossible for me to get the necessary commission, orders, etc., to get to New York that night. The St. Paul was to sail next day. However, at three o'clock, Capt. Metcalf and I were at the station and with my outfit mostly in paper parcels we got off to New York. Our orders were as follows:

WAR DEPARTMENT.
THE ADJUTANT GENERAL'S OFFICE,
WASHINGTON.

May 18th, 1917.

From: The Adjutant General of the Army.
To: The Commandant Army Medical School, Washington, D. C.

Subject: Travel Orders.

The Secretary directs as necessary in the military service that the following named officers of the Medical Officers Reserve Corps, now at the Army Medical School, proceed to New York City, and take the first available transportation for England, and upon arrival, proceed to London, and report in person to Colonel Alfred E. Bradley, Medical Corps, Adastra House, Victoria Embankment, for further orders.

Captain Carleton R. Metcalfe.
Captain Hiram W. Orr.
First Lieut. George P. Howe.
First Lieut. Louis J. Genella.

W. M. Wright,
Adjutant General.

A true copy.
Major Medical Corps, U. S. Army.

At ten o'clock that night we were struggling with khaki shirts, belts, leggings, etc., for the first time. Next morning at ten we were on the boat. (The St. Paul.)

Our journey from New York to Liverpool did not differ in many respects from that of many thousands who followed us during the next year and a half. We left New York harbor toward evening. Base hospital units No. 10 from Philadelphia and No. 21 from St. Louis were the most important part of the passenger list. The Goldthwait Orthopedic unit numbered twenty-one.

Definite training for our work abroad began the first day out. We even had a little of the physical discipline of which so many officers had more in the camps later on. We lined up for the exercises and drill twice a day. On each occasion a few were missing on account of sea-sickness or from the effects of anti-typhoid vaccine. Once or twice a day there were discourses by Major Goldthwait, with an opportunity for questions and discussions by the other members of the unit. Church service was interrupted by our three and six inch guns at target practice. At first the passengers crowded the upper deck to watch the guns shooting at barrels which had been dropped astern. After about the second or third day, however, the decks were cleared of passengers during target practice; later we learned that this was because of the accident which happened on another boat leaving New York harbor the same afternoon we did in which two nurses were killed.

There was an obvious increase in nervous tension as we approached the European side and the boat began to zig-zag instead of going straight ahead. Lookouts for submarines were increased in number and kept constantly on duty. The gun crews remained by the guns at all times. Very early on the second morning before reaching Liverpool the word went around that a torpedo boat destroyer might be expected to convoy us in. From the time this rumor spread until the little destroyer, with the stars and stripes appeared, the decks were crowded with passengers. The sight of the destroyer gave us the most inspiring moment of the trip, it was greeted with a rousing cheer. We had had two days of rough weather and were just becoming anxious about the danger from submarines.

The Goldthwait Unit at the home of Sir Robert and Lady Jones, Liverpool, May 28, 1917.

1—Capt. Fayerweather, Baltimore. 2—Capt. Graves, San Francisco. 3—Capt. Allison, St. Louis. 4—Lt. Willard, Philadelphia. 5—Capt. Kidner, Detroit. 6—Capt. Abbott, San Francisco. 7—Capt. Eikenbary, Spokane. 8—Capt. Cone, Baltimore. 9—Lt. Cole, St. Paul. 10—Capt. Baldwin, San Francisco. 11—Lt. McCausland, Boston. 12—Capt. Danforth, Providence. 13—Capt. Francesco, Kansas City. 14—Lt. Spencer, New Orleans. 15—Capt. Billington, Nashville. 16—Lt. Hall, Washington. 17—Col. Goldthwait, Boston. 18— 19— Major Erving, Washington. 20—General Sir Rob't. Jones. 21—Lady Jones. 22— 23—Lt. Langworthy, Chicago. 24—Lt. Durham, New York City. 25—Capt. Metcalf, Concord, N. H. 26—Capt Orr, Lincoln.

The Irish sea was as smooth as a mirror. We were across without having been, at least in so far as we knew, in any serious danger. We came into the port at Liverpool late in the afternoon. We were not allowed to go ashore until about 7 o'clock the next morning. A British officer came aboard and gave us full instructions as to hotels, transportation to London, etc. Not only that, but he acted as our personal escort until we were safely established in the Hotel Curzon, London.

The trip to London was made next day. In the meantime we had the day in Liverpool with quarters at the North Western Hotel. Sir Robert Jones and Dr. Osgood, who was on leave from France, met us at the hotel. We were entertained at tea during the afternoon at their home by Sir Robert and Lady Jones. At this time the situation in Great Britain was more definitely described to us. Quite large orthopedic centers were already going on at London, Liverpool and Edinburgh. Others were being started at Leeds, Bristol, Cardiff, Manchester, Glasgow, Dublin and Belfast. Plans were being made for the Americans to be assigned almost immediately. A few days opportunity, however, was to be offered for us to observe, in London, the work at one of the largest and most important Orthopedic clinics at Shepherd's Bush Military Hospital.

(To Be Continued.)

FOCAL INFECTIONS IN THE MOUTH.

Fred W. Webster, D. D. S., Lincoln.

When I was requested to give a paper on focal infections as pertaining to the mouth, the thought struck me that the thing of most importance to the dental profession just now, is not exactly whether every dead tooth is a possible source of trouble, but just where should the general practitioner stand until some of the, as yet, disputed points are sufficiently disposed of. In the two professions too much credence has been given to the personal opinions of certain members, often of note and repute, unsupported by scientific data.

A few years ago, certain men cured any abscessed tooth they treated, and in a very simple and easy manner, and their statements were accepted, as unquestionably a fistula would close and a sore tooth become comfortable, until this fallacy was disclosed by the roentgenogram. Next, the operation of apicoectomy was devised and extensively used for the treatment of all those teeth showing some destruction of apical pericementum. Then it was discovered that any pulp devitalized through the use of arsenic or septic destruction of the pulp could not be successfully treated and filled, and that only those pulps surgically operated on under an anesthetic of some kind could be successfully treated, and then only when a root filling extended to the dento-cemental junction and not beyond.

Now, Dr. Clyde Davis has shown by histo-pathological studies that the best treatments were those in which merely the bulbal portion of the pulp was removed; that these teeth very often show a complete closing of the apical foramina with cementum. These studies promise something, but the one outstanding fact as I see it, is, that in multi-rooted teeth, one root may be so closed, and the others widely open and unquestionably infected. This to me, seems to show that cementum may possibly develop in the presence of infection the same as we know bone does, and therefore, without bacteriologic control, means nothing definite. Another thing; a hypertrophy of any tissue usually means pathology, and almost all those roots showing a complete closure also show an apical hypercementosis. I do not intend to dwell very long on this root canal question, as I am going to try to show that its importance is far overstated, and that we have much more important work to do, and a great deal more than the present dental profession can take care of, and consequently have not the time to waste on this sort of work.

To go slightly into the histology of the tooth, we have five distinct tissues to consider; enamel, dentine, cementum, pulp and peridental membrane. The enamel, which is as nearly inorganic in structure as any living tissue can be, is the natural protection to the pulp, and when once diseased by caries is permanently destroyed, and can only be repaired by some foreign substance. That enamel is not entirely lacking in physiological changes and repair has been advanced by Head of this country and Pickerell of New Zealand. Both have shown that enamel may be rendered harder or softer, that is sclerotic or malacotic, during certain systemic conditions, such as pregnancy etc. This is of interest in that preventive dentistry may yet evolve a scientific constitutional treatment aside from the ordinary mouth sanitation.

The dentine forms the bulk of the tooth, and gives to it its general shape and contour. Dentine is highly inorganic in structure, containing from 60 to 80 percent of inorganic matter. Its organic structure is in the nature of minute fibrillae, which radiate from the pulpal surface towards the periphery through the dentinal tubuli. These fibrillae are most likely protoplasmic extensions of certain cells within the pulp, the odontoblasts, and communicate freely through spaces near the dentocemental and dento-enamel junction, known as Tomes granular layer. No definite communication between dentine and cementum or dentine and enamel has been demonstrated unless by the physical process of osmosis, but it is hard to conceive of two vital tissues such as dentine and cementum lying in intimate contact without some physiological interchange of fluids. Marchall of California is investigating this particular problem, and shows quite conclusively that dental fibrillae extend well into the enamel. We are bringing up all these points to show that normal functioning teeth have a very definite connection with the rest of the body structure, and conversely, diseased teeth have a like detrimental effect, and when once deprived of vitality they should be considered as dead tissue. Whatever the communication between dentine and cementum, the fact remains that the pulp is the vital organ of this tissue, and when the pulp is removed the dentine must necessarily be dead tissue, but not necessarily infected. But this highly inorganic substance, deprived of practically all resistance is surely very susceptible to infection, and probably so becomes in the large majority of cases within a very short period following. Novitsky of San Francisco in his experiments has found that teeth sterile at the time of devitalization and root filling, showed infection within a few months.

The pulp is a very delicate and highly vascular tissue encased in an inelastic compartment so that it is particularly helpless against any amount of infection. That the pulp may resist a certain amount of infection has been shown by Hartzell and Henrici. In their experiments, teeth with large carious cavities with a layer of dentine over the pulp, or badly pyorrheaed, have been carefully extracted, immersed in a solution of iodine and this allowed to burn off, wrapped in a sterile cloth and fractured. Cultures have been secured from the pulps. Control teeth so treated have proven negative. This may mean that large cavities or hidden proximal cavities may be a source of bacterial invasion without any recognized symptoms, and a full Roentgenographic mouth examination should be made periodically whether apparently indicated or not, as very often this is the only means of discovering these proximal cavities, especially so in the molar and biscuspid regions. Even though Hartzells' findings are true, the fact remains that the pulp cannot resist a great amount of infection, or infection of virulent nature, and all exposed pulps should be classified clinically as infected pulps, and such teeth extracted. In certain cases, especially children, deep cavities without pulpal symptoms of infection may be successfully treated by removing the softened dentine and treating the darkened and discolored dentine with Howe's silver precipitation method.

The cementum is the tissue covering the root, and occasionally even overlaps the enamel. (G. V. Black, Special Pathology.) It is by this tissue that the tooth is attached to the jaw through the fibres of the peridental membrane. In structure it is very similar to bone, is deposited about the root in distinct layers, becoming thicker with age. It contains many lacunae, more plentiful towards the apex, these communicating through canaliculi. It has no Haversian system, and receives its nourishment through the peridental membrane. The fibres of this membrane are calcified into it in bundles similar to Sharpey's fibres into bone. The destruction of these fibres by septic processes, so-called pyorrhea, not only deprives the tooth of just that much attachment, but also separates the cementum from its nourishing membrane. This means that the cementoblasts at this point degenerate, and that this becomes dead tissue, and when we have a septic destruction of this attachment for any distance, (pyorrhea pockets) it is a permanent destruction, and this fact should constantly be kept in mind in considering a pyorrhea condition. A reattachment is physiologically impossible except in rare cases. Destruction of these fibres of attachment may also take place about the apex due to infection from a diseased pulp. The detachment in this locality which often occurs without acute symptoms is the forerunner of the granulomatous and cystic conditions so often disclosed in the Roentgenogram.

The dental tissues so far discussed have been particularly low in vital resistance. The peridental membrane or pericementum has great resistance, especially is this apparent when we consider the great amount of injury this tissue receives, and the ever present horde of pathogenic bacteria that it must resist. This membrane is fibrous in structure, the fibres passing across from the cementum to the bony alveoli and mucous membrane. The subgingival space is a slight crevice immediately about the neck of the tooth. In normal conditions this tissue lies snugly against the tooth and the space is closed. The swell of the tooth crown protects this from injury during mastication. An atonic condition causes this to gape and opens the way to injury to the peridental membrane. Certain of the peridental fibres pass directly from one tooth to the other. These are situated close to the crown and form a sort of ligament that connects the third molar on the one side, around the arch to the third molar on the opposite. Whenever these fibres are destroyed between certain teeth, the teeth away from this on either side, have a tendency to pull and cause a separation at this point, that is why in so many pyorrhea conditions we see the teeth standing apart, with wide open spaces. This membrane has a very rich blood supply, the vessels taking a tortuous course around and about the fibre bundles, and running in a generally lengthwise direction. Also, there are numerous lymph channels as recently shown by Noyes, and these follow the course of the vessels. Immediately against the cementum and between the bundles of fibres is a single layer of cells, the cementoblasts. These are highly specialized cells. The fibres are attached to the bone of the alveolar process by the action of the osteoblasts.

Now whenever suppurative destruction of this membrane occurs, as in pyorrhea, the fibrous attachment is destroyed and also the cementoblasts. The peridental membrane lining this cavity or space undergoes inflammatory changes and its characteristic structure is completely destroyed. This means that we have pus cavities with a dense porous tissue, pus soaked cementum, and a chronically inflamed soft tissue against this with its broken down epithelium, and an almost direct communication with the lymph channels. As these spaces are under more or less pressure, it is very readily seen how these pockets are a very dangerous and constant menace to the individual. And also, as no reattachment can take place, the old orthodox treatment with stringent drugs only increases the danger. There are only two methods of treatment, both surgical. One of course, is the extraction of the tooth, and the other is to cut away the overlying gum tissue to the depth of the pocket. Both Noyes and Thoma have demonstrated the presence of bacteria within the tissues some distance from these pockets. The bacteria predominating in these infections are various forms of streptococci, staphlococci, and the pneumococcus.

Another dangerous and not commonly recognized condition is in the partially erupted third molar, and other sources of general systemic disturbance located within the mouth are impacted and unerupted teeth, These very often are infected and may cause grave nervous disturbances. Upson has recorded a great many interesting cures of mental cases following the removal of such teeth. The frequency with which the mouth is the location of some malignancy or neoplasm, and the fact that the dentist is the first to see such cases puts another great responsibility on our profession; to recognize and advise early consultation with a competent surgeon. Bloodgood advises that any persistent inflammatory condition within the mouth, wherein there is no apparent irritation, or the irritant has been removed, and which does not heal within two weeks should be viewed with suspicion and referred for a tissue examination.

As I see it, the mouth as being a source of infection from the dentist's standpoint, brings us to this. We should consider the mouth in its entirety, not tooth by tooth. We should make an examination everything the word means. We should try to put a mouth in such a condition that we can feel quite certain that it will not be a possible source of infection to that patient. A thorough physical examination, blood pressure and blood count is of importance, but why wait for the inevitable? When the patient is in apparently good health, but with a filthy or septic mouth, that is the time to correct it.

All dead teeth may not be infected or dangerous, but we all know that a dead tooth negative to the Roentgenogram is not necessarily a safe tooth. If a large percentage of dead teeth are infected and only 50 to 60 percent of these show roentgenographically, who can pick out the safe ones from the dangerous in the remainder? Lucus in a very interesting article in a recent journal had come to the conclusion that at least 90 percent of all dead teeth are infected. This was from a careful bacteriological investigation. Talbot cites the cure or improvement of a number of cases where dead teeth showing no pathology in the Roentgenogram were removed. Dr. Best, who is probably the best man on this phase of the work that we have, has, so I have just learned, given up the treatment of pulpless teeth entirely, and if one of his type, with all the equipment necessary and time to do such work, has quit it, what right has the average dentist working in the average dental office, to even attempt it? My advice is to throw your root canal instruments and equipment in the garbage can, and to put the energy you are wasting on such work in proper dental restorations. Learn to make properly constructed removable appliances and Tinker bridge work. Cut out gold crowns and saddle bridges, treating pyorrhea in the old way, or anything that will be of an irritating nature to the soft tissues. Do gum resection where indicated and do more extracting. Let us do more extracting before alveolectomy is indicated, but when it is indicated do it thoroughly. Right here I would like to say that though I am a great advocate of Nitrous Oxide, I believe that the gas game is being worked to death, and too many teeth are being removed under Nitrous Oxide anesthesia where the infection is not being eliminated.

In conclusion I would say that dentistry to be the profession that is now demanded of it, must be safe and sane, and this means the elimination of all possible sources of infection within the oral cavity. This is not radical, and, paradoxical as it may seem, the radical is one who still persists in taking chances with his patient's health. Let the scientists investigate this dead tooth business, and whatever the final findings, we can not be censored for pursuing what is a known safe course.

DISCUSSION.

Dr. Shearer, Omaha:—You mean a septic destruction of the peridental membrane is permanent?

Answer:—Yes. As was stated in the paper, the peridental membrane has wonderful resistance, but when once destroyed by chronic suppurative process, the destruction is permanent.

Dr. A. L. Smith, Lincoln:—I disagree with the essayist in regard to a physical diagnosis, etc.

Answer:—The point I wished to bring out in my paper was in regard to the routine dental patients. Those complaining of some systemic disorder, arthritis, malaise, etc.; and often where the mouth would make us suspicious of some blood change, these should always be referred for complete physical examination.

DISCUSSION OF PAPERS OF DRS. TYLER, SHEARER AND WEBSTER.

Dr. Arthur L. Smith, Lincoln. This symposium on focal infection has certainly been worth the time spent in coming out here. It is instructive indeed to hear the results of such masters as Drs. Tyler, Shearer and Webster. Personally, I know of the thorough painstaking work of Dr. Webster and when he says that filling of root canals is inimical to the future welfare of the patient, I am ready to accept his statement. I have been talking cooperation between all branches of medicine and dentistry until I have probably bored you all, so naturally it pleases me to hear Dr. Webster, a leader in his profession, agree with this idea. Dr. Ludwick and I have now reported on the bacteriology of 276 peridental infections, 111 of which were various types of streptococci. 111 young rabbits were injected, intravenously, with cultures of these organisms. In the 111 rabbits injected, the kidneys showed multiple abscesses 16 times, the cardiac muscle three times, the brain tissue once, and the joints 10 times. In each case the streptococcus was recovered. So in this series of 111 there were 30 metastatic infections causing pathological lesions far removed from the original focus.

I believe that local therapy should not be attempted until the general condition of the patient is known. I make it a practice to depend upon the specialist's diagnosis and do not think I am competent to advise him in his special field.

The internist who does not make a complete examination and does not take advantage of specialists training should not be tolerated. It is my firm belief that one man cannot become competent in the examination and treatment of the entire body either medically or surgically, so I am heartily in favor of the highly trained specialist and always take advantage of his superior training to the betterment of my patients. I believe the day is coming when any one who cares for human ills, be he dentist or chiropodist will be required to have a general medical training and then specialize in the body region in which he is interested. I believe in intensive and scientific training and believe that the standards cannot be made too high.

Finally, I wish to say that without cooperation of all those in different branches of medicine, the patient must suffer. I do not believe that a diagnosis should be made until the patient has been given the benefit of all the specialties which have a bearing upon his case. These findings in conjunction with general conditions must be taken into consideration in the final diagnosis and treatment.

In conclusion, the rapid advance of dentistry and medicine in the future must depend upon cooperation and not upon segregation.

Dr. Sanderson, M. D., Lincoln—I have certainly enjoyed the papers and also enjoyed the discussions very much. However, I would consider Dr. Tyler has outlined too extensive a field for positive diagnosis with the X-ray. He has called our attention to many cases and each one has shown a positive pathological condition. These I grant are very easily determined. There are numerous cases in which there is no apical abscess or rarified area shown. The infection is present in the root canal and is carried into the blood and lymph streams by so small an area of communication that it is impossible to show it by the X-ray findings. In this class of cases we must not allow the roentgenogram to bias our judgment and interfere with our clinical findings.

Dr. Shearer has shown roentgenograms of various modes of removing teeth also of opening the maxillary sinus. He has spoken of finding the apices of teeth curetted away. I consider this very careless on the part of the rhinologist and can see no reason for its occurrence.

I must also take marked issue with Dr. Shearer as to the number of infected teeth that may be removed without causing any reaction or shock to the patient. Through the kindness of some of our local dentists, I have had the opportunity of seeing these various methods of tooth removal demonstrated. I would consider that if one tooth was removed and there was no reaction, I had simply not found the pathological cause. I have seen the removal of one infected tooth cause a reaction so violent that the patient was confined to his bed for as long as a week or more. He has said these cases have already vaccinated themselves. That is true to some extent. However, when you heap more toxine on an already overtoxic system that has been laboring for a various number of years to keep the system going, it may be "the last straw that breaks the camels back.' It is true that rare cases overcome the increased labor thrown upon them very readily no matter how great the task. Others give way under the increased load and "cross the great divide." I would consider that if the case Dr. Shearer reported as terminating fatally had not been treated so radically, the end results would have been more pleasant. Many of you know from experience that it is impossible to do any operation of any consequence, even a simple appendectomy, upon the body without having some reaction. And I assure you the mouth is no exception. Dr. Clyde Davis of Lincoln, in a series of approximately five-thousand (5000) cases concludes that removing an infected tooth opens the area directly into the blood and lymph streams and if a reaction is not obtained, the real cause has not been reached. He reports many cases in which the tooth that showed the least pathology in the roentgenogram gave the greatest reaction and also the greatest benefit to the patient.

There has been much stress placed upon the streptococcus as the chief offending microorganism in focal infections. Dr. A. L. Smith and I have made numerous cultures from teeth and tonsils and have found that the streptococcus was the predominating organism in a comparatively small percentage of cases. We have also found that the most violent systemic reactions were in cases showing a staphylococcus infection. Therefore I would warn you not to consider the presence or absence of the streptococcus of any more pathological significance than many other microorganisms found in the mouth.

Dr. Webster has given us one of his usual good papers and has very thoroughly covered the subject from the viewpoint of an up-to-date dental surgeon. Each year when we have a joint meeting of the Lancaster County Medical and Dental Societies, we expect Dr. Webster to give us some modern instruction in up-to-date dentistry and we are never disappointed. He has been one of the leading dentists of our city to cooperate with the physicians in this trying time of focal infections. I want to call your attention to his emphatic insisting upon complete removal of all infected conditions. And his method of preventing the recurrence of any new foci.

REMOVAL OF OPEN SAFETY PIN FROM OESOPHAGUS OF INFANT.

B. M. Kully, M. D., Omaha, Neb.

M. S., age 1½ years, was referred by Dr. S. Hirshfield with a history of having swallowed a small safety pin two hours previously. There was no coughing paroxysm and no dyspnoea at the time this occurred. The baby remained normal and showed no signs of discomfort. Shortly before being brought to the office, water was administered and was swallowed without difficulty. Physical examination was negative. Fluoroscopic examination revealed a small safety pin, 2 cm., in length, apparently closed, lying obliquely in the upper oesophagus at the level of the first and second dorsal vertebrae.

The short Bruening oesophagoscope was passed, no anaesthesia being used. The pin was located about 2cm., below the upper constriction of the oesophagus and was seen to be open, the point penetrating into the right wall of the oesophagus for a distance of approximately 4mm. As the ring of the pin was upward, removal presented no difficulties. Recovery was uneventful.

The case is of interest on account of the complete absence of subjective symptoms, in the presence of the open safety pin in the oesophagus.

NEW ADVERTISERS.

Our new advertisers in this issue are The Ideal Cement Stone Co. of Omaha, Latsch Bros. of Lincoln and the Orange Crush Co. of Chicago. Our readers should show their appreciation to the firms that advertise with us by patronizing them.

A leading London physician reports that spiritualism is responsible for one hundred thousand cases of insanity in Great Britain alone.

According to Popular Science Monthly, a doctor at Johns Hopkins Hospital has discovered a way of pumping purified air into the brain so as to locate and remove tumors which would cause either idiocy or death.

A man's conduct toward others is determined less by his respect for them than by his respect for himself.

BOOKS RECEIVED.

Epidemic Respiratory Disease. The pneumonias and other infections of the respiratory tract accompanying influenza and measles. By Eugene L. Opie, M. D., Francis G. Blake, M. D., James C. Small, M. D., Thomas M. Rivers, M. D. Cloth. Price $6.50. Pp., 402 with illustrations. St. Louis: C. V. Mosby Co., 1921.

Optimistic Medicine or the early treatment of simple problems rather than the late treatment of serious problems. By a former insurance man. Cloth. Price $3.00. Pp. 318. Philadelphia: F. A. Davis Company. 1921.

Rational Treatment of Pulmonary Tuberculosis. By Charles Sabourin, M. D., Medical Director of the Durtol Sanatorium Puy-de-Dome, Paris. Authorized English Translation from the sixth, revised and enlarged French edition. Cloth. Price $3.50. Pp. 440. Philadelphia. F. A. Davis Company. 1921.

Eye, Ear, Nose, and Throat Nursing. By A. Edward Davis, A. M., M. D., and Beaman Douglass, M. D. Cloth. Price $2.50. 2nd Revised Edition. Pp. 346 with illustrations. Philadelphia: F. A. Davis Company. 1920.

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THE ANNUAL MEETING—MAY 9-12.

By the time this issue of the Journal reaches the reader, the annual meeting for 1921 will be only a few days away. Every doctor who is a member of the State Association should make a special effort to attend part, if not all of the sessions.

A scientific program has been arranged, which, in the opinion of those who have seen it, should be one of the best ever given by the Association.

For the evenings and other times not occupied by the program and business, the local committees on arrangement and entertainment have provided a number of features, which will be enjoyable to everyone.

So let every doctor make a special effort to be present in Lincoln from May 9 to 12, and make this the biggest and best convention ever given by the Nebraska State Association.

See program in this number.

STATE HEALTH INSURANCE

The problem of state health insurance is not one that physicians may consider of their own free will. We are not dealing with it as a matter of choice. On the contrary, it is gradually being forced upon our attention. It is not an issue concerning which the citizens of Nebraska (whether physicians or otherwise) can say: "We will have nothing to do with it!" The movement is at our border, and it is only a question of time when it will have something to do with us.

The system had its origin in Germany in the early eighties, under the rule of Bismarck. Many reasons are given for its initiation by the German government. Several years later the English government, under the direction of Lloyd George, adopted a similar plan. It is said that Lloyd-George favored this because he felt that the law had had a good effect upon health conditions in Germany. It is further stated that he succeeded in having this law enacted without consulting the medical profession of England in any way.

For the last few years the issue has been brooding in America. Bills relating to health insurance have come up before the legislatures of many of our states. The state of Illinois has discussed the problem very thoroughly, pro and con. It is only a question of time when it will be forced upon the attention of Nebraskans in the form of a proposed law. The people in general, and physicians in particular, should bear it in mind. Not only would such a law affect the physician personally, but it would also affect those principles of sociology and economics which the physician must consider a part of his domain and for which, in part at least, he is sponsor.

In considering this subject, certain points stand out with especial emphasis: Under this system will the physician receive a just financial recompense? Will he improve in either science or service? Will he be able to give the service which the scheme contemplates? Will the better qualified physicians enter the work, or only those who are poorly qualified? What part will politics play in the proposed plan? Will the individual patient be better served? Will the general health and sanitation of the community be better cared for? Will the morbidity and mortality rates be lowered? What will be the effect on the morale of the patient treated? Will he become independent, or more parasitic? Will such a regime develop patriotism, or will it increase class selfishness as it decreases the spirit of appreciation? Finally, from a purely economic standpoint, will it pay?

Every physician in Nebraska should become more or less conversant with the results following enactment of health insurance laws in other countries.

H. J. L.

PYLORIC STENOSIS.

It is very seldom that an improper diagnosis is made as a result of lack of knowledge, but often from lack of proper care or thoroughness in examination. There is probably no condition in which this happens more frequently than in the persistent vomiting of infants.

Altogether too often the mother calls the physician on the 'phone or comes into the office, without the baby and wants to know what to do for the baby's vomiting. We are all prone to try to help out the simplest way, but few of us probably realize the seriousness of this procedure.

Within the last few weeks it has been our misfortune to see two infants die of starvation as a result of this attitude. In one case in particular, we can see no excuse for a proper diagnosis having been overlooked. While the child had been seen by several physicians, not one had taken the pains to undress the child or to make more of an examination than look at the mouth and feel of the abdomen through the clothes.

There had been persistent vomiting for the four weeks starting when the child was two weeks old. The child had been taken from the breast and several foods had been tried. Bismuth and numerous cathartics had been given persistently on account of the apparent constipation. This child had lost between four and five pounds and was one of the most pitiable specimens we have seen in a long time. On removing the clothing a peristaltic wave fully one-half inch high could be seen crossing the abdomen from left to right and where this disappeared under the right costal arch a distinct tumor mass could be felt. Regurgitation of food was complete and the stool consisted entirely of mucus. No wonder cathartics had accomplished nothing. Not all cases of obstruction at the pylorus are as evident as this, but in any case where vomiting persists, further examination should be made, particularly if the vomiting is forcible. The length of time that the food is retained in the stomach after a feeding is very important and can be determined either by X-ray or gastric lavage by catheter.

Infants take a tube very kindly and it is no great trick to pass a tube four hours after a meal and see how much food is retained. The greater the amount retained at this time and the longer it is retained, of course, make the diagnosis more positive. Naturally the smaller the amount of food going through the pylorus the smaller will be the stools. It is not uncommon, however, to have a frequent stool consisting mostly of mucus.

One peculiarity in the feeding in some of these cases is the fact that there is a temporary improvement with every change of food no matter how irrational it may be. This is very misleading at times as altogether too often these babies (fifty per cent of whom are on the breast at the beginning of trouble) are taken from the breast as a result of this temporary improvement when some artificial food is given. Very often too, there will be no vomiting following several feedings and then a larger amount than has been given at any one time will be regurgitated.

We realize that it is often not an easy matter to make an absolute diagnosis between stenosis and spasm as nearly always there is some overlapping. When the predominating element of the obstruction is a stenosis, we feel that early surgical intervention is the proper procedure. Our results with thick gruel feedings, atropine, gastric lavage, etc., in the stenosis cases do not justify us in being enthusiastic about them.

In the case where spasm is the predominating element, these methods often give excellent results. Surgical intervention where indicated, should be an early procedure and not a last resort measure. When operated upon early, the death rate in these should be almost nothing.

We are not making our plea, however, for treatment but for more care in the examination and diagnosis. We, ourselves, will plead guilty to being remiss in this many times, but each time we have been, we have seen results that have not been desirable.

N. J.

FALLING PRICES.

At the present time the medical profession has a special problem to meet in the falling prices in various lines. How is the situation to be met?

Some are meeting it in one way, some in another. One considers his fees were too low prior to the era of high prices and decides to maintain his present schedule, believing himself entitled to the same. The elevation once reached by reason of the general inflation in all lines, he grasps the opportunity to get his remuneration upon what he considers a just basis. All this irrespective of the present slump in most lines of expense connected with the carrying on of his professional work.

Another is allowing his fees to slip back to prewar basis, deeming it necessary to meet the decline and perhaps "go it one better." He is influenced largely at times by the scarcity of loose money as observed in most localities. He unconsciously goes with the tide, having little thought whither it may land him. To tide over the breach with no thought of the future, he accepts the situation and passes backward to the shore of low values and uncollected accounts.

Still others are compromising by splitting the present fee as compared to the prewar standard and making other concessions to meet in a measure the general deflation in most lines.

It may be the readjustment is needful, no doubt in many localities this is true. It would appear that the greater number of the readjustments are being made in a rather haphazard manner, with little attention to the fundamental factors involved.

Few are considering the situation from a business standpoint, or have actually or accurately determined the cost of carrying on professional work in any particular locality.

The doctor has long been considered the easy mark, not only in his own profession, but without, and prey to the ever present designing stranger, who lies in wait to glean a few easy dollars where the pickings are good. "A good doctor but a poor financier." has come to be a by word in and out of the profession. As medical men we should resent this, and resenting it, endeavor so to balance our efforts that the slogan may run "a good doctor, likewise a good financier."

There never has been a better time to get to the bottom of the whole unsatisfactory subject of proper remuneration to the medical man than the present. As the whole world is undergoing a readjustment, it behooves us as efficient members thereof to get in line and eliminate one at least of the bugbears of our cult.

What is the remedy? Where shall we start? Have we an ideal to strive for?

Every medical man should know just what it is costing him to conduct his professional work. He should keep an accurate account of all expense incurred in connection therewith.

The percentage of bad accounts and charity to the poor should be carefully estimated or determined. The original investment and how much is being put back into his profession yearly must also form a part of the basis upon which he can rightly expect a just recompense for his endeavor.

The medical men in various localities anent the preceeding have almost universally sought for uniformity in the fee schedule. This may be the explanation for the very unsatisfactory condition into which the finances of some have drifted. The expediency of uniformity may be necessary, its justice is very doubtful.

The whole subject of fees will vary upon the basis already suggested for every locality, and for almost every man involved, one may have invested a much larger sum in his original education, another is putting more back into his profession yearly in the way of postgraduate work, the attendance at medical meetings, the acquisition of a better medical library, or the addition of more improved tools with which to work.

If in any particular locality it seems necessary that the fees should be uniform, let the medical men get together. It is certainly quite undesirable that one or more should be extremely high or unusually low. They should arrange to go into the matter from a business and cost standpoint, as already suggested. Each should be able to produce his estimates and conclusions. This will vary widely as between the highest and the lowest, but under wise consideration an average may be struck that will bring cooperation with proper readjustment and fairness to all.

The laborer is worthy of his hire. In the readjustment to meet the changing conditions, let us be prepared to meet the situation efficiently as all other lines are attempting to do. As between cost and income, let us not revert to the altruistic indifference of the past, but endeavor to stand with the advance as worthy members of an indispensible profession. A word to the wise is sufficient.

W. R. P.

THE RICHARDSON COUNTY PLAN.

Our law provides for two very important officials, County Physician and County Health Officer. In the application of the laws in agricultural counties with scattered population and few railroads with abbreviated train schedules the problems presented are varied and complex and the results attained by such officials often so unsatisfactory that those in authority have found the law impracticable of application to the end sought and as a consequence there are counties in Nebraska without a designated county physician and county health officer.

Instance a county in which the court house is in one corner of the county, the largest city in another corner, and the county farm in another direction fifteen miles from either city, and the half dozen towns of the county hugging three of the four borders of the county.

In some counties where such officials function, the results from the standpoint of the greatest good to the greatest number must fall far short of the ideal, for it is not humanly possible that in all cases necessary attention can be given by the physician appointee to widely scattered patients.

It is interesting therefore to note the method evolved by the organized profession of Richardson county to meet the varied conditions and to record its successful operation.

By a contract entered into by and between Richardson County and a physician located at the county seat, said physician becomes County Physician and County Health Officer and agrees to appoint assistants at several designated strategic places in the county. As county physician he agrees to do all the necessary medical and surgical work for the indigent of the county either personally or through the assistants, the work to include county jail patients and those at the county poor farm. A salary somewhat commensurate with the duties required is paid to this dual official and he makes adequate financial arrangements with the assistants, in this case regular rates.

Richardson county has a numerous and well organized profession probably second to none in rural Nebraska and this may in part account for the smoothness of the working of the method; but with slight modifications to suit local conditions the plan above outlined ought to be workable in any other county in Nebraska.

A BIT OF RETROSPECT.

Before the Los Angeles meeting of the American Medical Association in 1911, Dr. Van Buren Knott of Sioux City, read a paper advocating the very radical procedure of removing the appendix in all cases of ruptured appendix without regard to the degree of peritonitis present and cited a series of cases operated upon by himself in support of the practicability of the method.

In the discussion of the paper he was unmercifully "lambasted" by leaders in the surgical profession. One may imagine with what contempt this view of a comparatively young man from a Missouri valley town was received. Barely ten years have elapsed since that meeting, but for some years the radical procedure then advocated has been the generally accepted one. Truly, "the thoughts of men are widened with the process of the suns."

ALLEVIATING THE SCOURGE OF THE AGES.

The general government has acquired the Louisiana Leper Colony for the nucleus of a federal leprosarium, for which congress appropriated several hundred thousand dollars a few years ago. A hospital car was recently sent to Washington and Atlantic coast points to gather isolated lepers and transfer them to the federal leprosarium. Charles Young who became famous as the Nebraska leper was one of those transferred from Washington, where he was apprehended following his escape from the Madison County Farm.

The Kalihi leper hospital near Honolulu, has now paroled 142 patients presumably cured of leprosy by the refined chaulmoogra oil treatment, the last group of sixty-four men and women constituting the third group released. Of all those released within the past two years not one has been returned owing to recurrence. It appears that science has won another great battle with the scourge of the ages.

POST-GRADUATE COURSE FOR PRACTITIONERS AT THE UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE

A two-weeks post-graduate course open to legally-qualified practitioners of medicine will be offered by the University of Nebraska College of Medicine and Hospital, Omaha, beginning June 20, 1921. The one-week course offered last year proved so successful and met with such hearty appreciation that it has been decided to lengthen the course this year to two weeks. Information relative to subjects offered will be published in circular form, which will be ready for distribution by May 1st.

Those who have become acquainted with

Dr. Will Kennecott, of Gopher Prairie, supposed typical general practitioner of a recent novel, must have been struck with the apparent ease and simplicity of pioneer country surgery. Called out of bed at midnight he goes ten miles in the country, finds his patient, a fat woman, with appendicitis, rolls up his sleeves and without any assistance does an appendectomy and is home and abed at 4 A. M. Looks easy doesn't it?

Physicians in practice a score of years well remember that chloroform for many years was the anaesthetic of choice and that for the last decade ether has been the much vaunted anaesthetic. It is therefore interesting to learn that chloroform is again being recognized as a safe anaesthetic in the hands of a careful administrator.

That the Nebraska State Bureau of Health finds it necessary to keep prodding physicians for better and more prompt birth and death reports is lamentable.

We may smile at our competitor's mistakes, for to smile is harmless; but that does not indicate faultlessness on our own part.

OFFICERS OF THE NEBRASKA STATE MEDICAL ASSOCIATION.

DR. M. S. MOORE,
President

DR. R. B. ADAMS,
Secretary-Treasurer.

SCIENTIFIC PROGRAM.

Annual Meeting, Lincoln, May 9-12, 1921.
Tuesday, May 10th, 9:00 A. M.

Public Meeting.

Symposium on Early Recognition of Cancer:
- Cancer of the Gastrointestinal Tract, D. C. Hilton, M. D., Lincoln.
- Cancer of the Breast, G. W. Covey, M. D., Lincoln.
- Superficial Cancers, A. F. Tyler, M. D., Omaha.
- Cancer of the Uterus, Palmer Findley, M. D., Omaha.

Motion Pictures.
- The American Plan for Combating Venereal Diseases, P. H. Bartholomew, M. D., Lincoln.

Tuesday, May 10th, 1:30 P. M.

Opening Exercises.
President's Address, M. S. Moore, M. D., Gothenburg.

1.—Physical Signs of Early Tuberculosis, Miles and R. J. Breuer, M. D., Lincoln. Discussion opened by T. C. Moyer, M. D., Lincoln.

2.—The Alkalis in Acidosis, Floyd Clark, M. D., Omaha. Discussion opened by H. M. McClanahan, M. D., Omaha.

3.—Problem of Nutrition in Children of School Age, W. O. Colburn, M. D., and E. V. Wiedman, M. D., Lincoln. Discussion opened by Clyde Moore, M. D., Omaha.

4.—Observations on Epidemic Encephalitis, F. E. Coulter, M. D., Omaha. Discussion opened by B. F. Bailey, M. D., Lincoln.

5.—Tic Douloureux in Relation to Latent Maxillitis, H. B. Lemere, M. D., Omaha. Discussion opened by Frederick Teal, M. D., Lincoln.

Wednesday, May 11th, 9:00 A. M.

1.—X-Ray, Radium and Surgery in the Treatment of Cancer, R. L. Smith, M. D., Lincoln. Discussion opened by C. H. Ballard, M. D., Omaha.

2.—A Review of 2,000 Consecutive Confinements Franklin Schaufelberger, M. D., Hastings, Discussion opened by W. H. Taylor, M. D., Omaha.

3.—Posture Before and After Confinement, C. W. Pollard, M. D., Omaha. Discussion opened by Homer Davis, M. D., Genoa.

4.—Indications and Surgery of Caesarean Section, George P. Shidler, M. D., York. Discussion opened by C. J. Miller, M. D., Ord.

5.—Endocrine Therapy in Sterility, R. H. Foster, M. D., Tilden. Discussion opened by Ralph Luikart, M. D., Omaha.

6.—Prolapsus Uteri, C. A. Roeder, M. D., Omaha. Discussion opened by C. A. Allenburger, M. D., Columbus.

7.—The Treatment of Diabetes Mellitus, A. D. Dunn, M. D., Omaha. Discussion opened by J. M. Mayhew, M. D., Lincoln.

Wednesday, May 11th, 1:30 P. M.

1.—Address by Chairman of Medical Section, Frank Conlin, M. D., Omaha.

2.—The Lyons-Meltzer Gallbladder Drainage, Adolph Sachs, M. D., Omaha. Discussion opened by R. W. Bliss, M. D., Omaha.

3.—Observations of 150 Cases of Gallbladder Diseases, J. S. Welch, M. D., and S. O. Reese, M. D., Lincoln. Discussion opened by A. C. Stokes, M. D., Omaha.

4.—Surgery of the Gallbladder with an Analysis of Cases, B. B. Davis, M. D., Omaha. Discussion opened by P. H. Salter, M. D., Norfolk.

5.—Gastroduodenostomy vs. Gastrojejunostomy, Henry B. Boyden, M. D., Grand Island. Discussion opened by Karl Connell, M. D., Omaha.

6.—The Non-Surgical Management of Peptic Ulcer in the Light of Modern Clinical and Laboratory Investigations, Frank Smithies, M. D., Chicago, Ill.

Thursday, May 12th, 9:00 A. M.

1.—Basal Metabolism and its Practical Significance, M. G. Wohl, M. D., Omaha. Discussion opened by H. J. Lehnhoff, M. D., Lincoln.

2.—The Conservation of Hearing, C. G. Baird, M. D., Beatrice. Discussion opened by Earl B. Brooks, M. D., Lincoln.

3.—Fat Embolism, C. O. Rich, M. D., Omaha. Discussion opened by Carl Bastron, M. D., Lincoln.

4.—The Passing of the Family Physician, J. Lue Sutherland, M. D., Grand Island. Discussion opened by F. A. Long, M. D., Madison.

5.—Undescended Appendix, A. F. Jonas, M. D., Omaha. Discussion opened by J. S. Simms, M. D., North Platte.

6.—The Treatment of Perforations of Hollow Viscera, C. H. Newell, M. D., Omaha. Discussion opened by B. R. McGrath, M. D., Grand Island.

7.—Important Facts About the Brain, E. C. Henry, M. D., Omaha. Discussion opened by G. W. Dishong, M. D., Omaha.

Thursday, May 12th 1:30 P. M.

1.—Address by Chairman of Surgical Section, C. R. Kennedy, M. D., Omaha.

2.—Conservative Treatment of Prostatic Hypertrophy, A. P. Condon, M. D., Omaha. Discussion opened by A. I. MacKinnon, M. D., Lincoln.

3.—Differential Diagnosis of Right-sided Kidney and Ureteral Stone and Appendicitis, C. B. Calbreath, M. D., Hastings. Discussion opened by Edwin G. Davis, M. D., Omaha.

4.—A Rational View Point in Medical Practice, I. S. Cutter, M. D., Omaha. Discussion opened by E. W. Rowe, M. D., Lincoln.

5.—Grafts of Entire Bone Substance, J. P. Lord, M. D., Omaha. Discussion opened by H. W. Orr, M. D., Lincoln.

6.—The Non-surgical Treatment of Hyperthyroidism, A. L. Smith, M. D., Lincoln. Discussion opened by George Pratt, M. D., Omaha.

7.—Clinical Syndromes in Serous Meningitis Following Infectious Diseases, G. A. Young, M. D., Omaha. Discussion opened by H. A. Wigton, M. D., Omaha.

WAR DEPARTMENT — MILITIA BUREAU.
Washington, D. C.

November 17, 1920.

M. B. 210. 1-G
Circular Letter No. 71
From: The Chief, Militia Bureau
To: The Adjutants General of all States, Territories of Hawaii and Porto Rico, and the District of Columbia Militia.
Subject: Recognition of Captains, Medical Corps, National Guard.

1. The following quoted from an opinion of the Judge Advocate General, United States Army (J. A. G. 325.35, Oct. 30, 1920) is furnished for your information:

"In view of subsequent legislation with regard to promotion in the Medical Corps, it is the opinion of this office that the opinion first cited (58-241 J. A. G., Aug. 14, 1916) in so far as it restricts the recognition of captains in the National Guard to those who have had the prescribed service as First Lieutenants, should not be applied to the existing situation. It is, therefore, the opinion of this office that there is no legal objection to extending Federal recognition to captains in the Medical Corps, National Guard, irrespective of their prior service as First Lieutenants, provided they are otherwise qualified under existing statutes and regulations."

2. The Militia Bureau will extend Federal recognition to officers of the Medical Corps with suit-

able qualifications in the grade of captain as well as in the grade of First Lieutenant and Major.

By direction of the Secretary of War:

J. McI. CARTER,
Brigadier General, U. S. Army.

A true copy.
W. A. McDaniel,
Lt. Col. Inf., U. S. Army.

VITAL STATISTICS OF NEBRASKA, — BIRTHS AND DEATHS, 1919 AND 1920.*

(By courtesy of the State Bureau of Health.)

County	1919 Births	1920 Births	1919 Deaths	1920 Deaths
Adams	446	567	314	370
Antelope	301	374	136	128
Arthur	6	17	1	6
Banner	19	28	4	7
Blaine	32	37	5	12
Boone	351	396	107	95
Box Butte	208	241	69	93
Boyd	166	202	101	66
Brown	104	153	50	61
Buffalo	518	521	223	297
Burt	255	320	104	119
Butler	322	333	117	128
Cass	357	351	122	161
Cedar	340	437	107	110
Chase	102	132	29	35
Cherry	242	276	53	96
Cheyenne	233	257	68	64
Clay	288	302	99	106
Colfax	215	255	66	86
Cuming	300	366	114	118
Custer	616	679	178	226
Dakota	133	162	40	58
Dawes	162	238	62	78
Dawson	353	417	129	146
Deuel	60	72	20	29
Dixon	259	289	61	76
Dodge	437	468	219	229
Douglas	3,912	4,649	2,476	2,815
Dundy	111	155	46	41
Fillmore	262	321	87	114
Franklin	229	260	57	76
Frontier	167	223	46	61
Furnas	239	323	134	117
Gage	674	693	296	325
Garden	96	126	21	29
Garfield	100	85	29	22
Gosper	109	89	40	29
Grant	20	34	9	18
Greeley	202	221	54	58
Hall	432	489	272	328
Hamilton	286	339	108	104
Harlan	224	232	76	71
Hayes	91	86	14	20
Hitchcock	141	149	55	42
Holt	362	431	111	137
Hooker	18	23	21	13
Howard	203	236	70	78
Jefferson	355	370	146	131
Johnson	189	204	99	74
Kearney	189	200	75	79
Keith	66	104	28	42
Keyapaha	52	55	2	7
Kimball	113	125	41	43
Knox	358	489	154	163
Lancaster	1,762	1,929	1,051	1,098
Lincoln	362	507	184	169
Logan	47	50	11	14
Loup	32	29	13	17
McPherson	25	22	6	7
Madison	446	518	300	305
Merrick	215	230	89	102
Morrill	152	234	48	69
Nance	180	249	54	70
Nemaha	256	278	100	103
Nuckolls	250	313	88	97
Otoe	361	383	172	188
Pawnee	231	230	76	107
Perkins	75	106	18	22
Phelps	193	233	85	98
Pierce	248	302	80	93
Platte	504	519	177	198
Polk	221	226	78	83
Redwillow	250	294	77	117
Richardson	427	453	171	189
Rock	64	80	17	30
Saline	300	310	146	143
Sarpy	101	161	43	59
Saunders	399	421	154	158
Scotts Bluff	475	661	185	185
Seward	380	450	149	157
Sheridan	253	297	64	83
Sherman	181	260	57	49
Sioux	87	101	17	21
Stanton	189	195	50	53
Thayer	317	325	82	118
Thomas	41	33	9	9
Thurston	289	293	120	154
Valley	177	230	68	94
Washington	249	253	91	80
Wayne	215	241	90	76
Webster	258	273	84	108
Wheeler	36	51	21	11
York	367	408	161	163
Total	26,640	30,749	11,651	12,934

*Exclusive of Stillbirths.

ITEMS OF INTEREST

	1919	1920
Pairs of twins	268	336
Sets of triplets	1	8
Infant mortality under one year	1692	1997
Premature births Infant lived a short time	749	882

GENERAL NOTES.

The Physiatric Institute, Morristown, N. J., occupying the site of the former estate of Otto H. Kahn is to be devoted to the investigation and treatment of metabolic disorders especially diabetes, obesity, Bright's disease, and high blood pressure. One of the most important purposes of the Institute is said to be scientific research.

Dr. Hubert Work, Pueblo, Colo., President of the American Medical Association, has been appointed First Assistant Postmaster General, and has assumed the duties of the office. Dr. Work has been prominent in Colorado and national politics for many years. He was the Colorado member of the Republican National Committee last year.

Grand Island has suffered a severe epidemic of scarlet fever since the first of the year. Over one hundred cases were reported during the first three months of 1921 with a mortality of at least twenty. Three fatal cases of cerebrospinal meningitis were recorded during the same period.

St. Mary's Hospital, Columbus, Nebr., has been given Class "A" rating by the standardization committee of the American College of Surgeons.

The First National Hospital Day is to be observed throughout the country, May 12. That the community may know its hospitals it is suggested that invitation be given to the public to inspect the institution, that literature be distributed telling of work and needs of hospital, that graduation exercises be held for schools for nursing, that open house be held for high school girls and others interested in nursing and that the nurses' home be inspected.

A Dr. J. F. Stevens Memorial Student Loan Fund is being created in Lincoln.

The annual meeting of the Nebraska Tuberculosis Association was held at Omaha, April first. Dr. W. A. Evans former health commissioner of Chicago, spoke on "The Growth of the Tuberculosis Movement."

The W. C. T. U. Hospital of Kearney has come into possession by bequest of a house and lot, by the will of the late Jonathan Drake of Amherst.

The Presbyterian Board of Foreign Missions is making a nation wide search for a doctor skilled in psychiatry, under 35 years of age, willing to enter the foreign mission service and take charge of an insane asylum for Chinese insane.

There are fifty members in the senior class of the Nebraska University College of Medicine. Degrees will be granted at the regular commencement of the University at Lincoln, June 6, 1921.

Creighton Medical College has 22 in the senior class and commencement will come June 4th.

SOCIETY NOTES.

On the evening of March 19th., about seventy physicians from Omaha and Lincoln gathered at the Lincoln Hotel, Lincoln, as guests of Drs. Smith & Rowe to celebrate the twenty-fifth anniversary of the Roentgen ray. The meeting was enthusiastically attended and all present seemed to have a pleasant and profitable time. A banquet and the following programs were featured: "The Relation of Roentgenology to Internal Medicine," Dr. G. W. Covey; "The Relation of Roentgenology to Rhinology and Otology," Dr. J. J. Hompes; "The Relation of Roentgenology to Orthopedics," Dr. H. W. Orr: "The Relation of Roentgenology to Dentistry," Dr. F. W. Webster; "The Relation of Roentgenology to Surgery," Dr. J. S. Welsh; "New Methods in Sinus Diagnosis," Dr. W. W. Wasson, Denver, Colo.; "Therapy," Dr. E. H. Skinner, Kansas City, Mo.

The Nemaha County Medical Society entertained the physicians of three counties at a meeting, March 15th. Thirty-four physicians were present. The subject was "The Gall Bladder," and the principal talks were given by Drs. A. Sachs, J. W. Duncan, and Geo. S. Simanek, Omaha.

At a meeting of the Saline County Medical Society at Crete, in March, Dr. P. H. Bartholomew, A. A. S. U. S. P. H. S. and Dr. I. H. Dillon, Chief, Bureau of Health, were present and the meeting was devoted to venereal diseases and other public health matters.

At a revivification meeting of the Otoe County Medical Society held at Nebraska City, March 29th, Dr. M. L. Koser was elected president; Dr. Parker, Syracuse, Secretary-Treasurer; and Dr. S. S. Wilson, Nebraska City, Delegate.

At the monthly meeting of the Madison County Medical Society, Norfolk, April 7, Dr. A. D. Dunn, Omaha, gave an address on "The Kidney Problem." Thirty-five physicians were in attendance.

The Scotts Bluff County Medical Society held its April meeting at Scottsbluff on the 19th, and had as their guests members of the Scotts Bluff County Bar Association. The following papers were presented: "The Doctor as an Expert Witness," by Attorneys York and Mothersead of Scottsbluff; discussion opened by Mr. L. E. Cottle, Gering. "The Relation of a Doctor to the Patient and to the State," by Mr. Wm. Heiss, Gering; discussion opened by Mr. Will Morrow, Scottsbluff. The next meeting will be held on May 17th and papers will be presented by the following members: Drs. J. N. Stoopes, Scottsbluff; W. E. Shike, Gering; T. J. Vanderhoof, Scottsbluff and E. J. Mitchell, Scottsbluff.

The Jefferson County Medical Society met in the Chamber of Commerce rooms at Fairbury on March 25th. Invitations were sent to all the physicians in the surrounding territory and a large number responded by their presence. Dr. H. J. Lehnhoff of Lincoln, presented a very interesting and instructive paper on "The Diagnosis of Gall Stones," which elicited much good discussion. It is the intention of the society to have a meeting every three months, and at each time present, or have presented, some timely paper for discussion.

The Saline County Medical Society met at the Cosmopolitan Hotel, Crete on Tuesday evening, April 12th. After a seven o'clock dinner Dr. D. D.

Sanderson of Lincoln presented an excellent paper on "Diseases of the Accessory Sinuses." Dr. Carl Kail of Lincoln illustrated the value as well as the limitations in the use of X-ray, especially as related to the accessory sinuses. The discussion was opened by Dr. Byrne and Dr. Elliott, followed by remarks from most of the doctors present. Many expressions were heard of the benefit the society is deriving from their monthly meetings.

ABOUT THE DOCTOR.

Dr. George F. Johnson has opened an office at Bridgeport.

Dr. C. G. Rice, formerly of Bayard, has located at Sutherland.

Dr. F. L. Frink was elected mayor of Newman Grove in the spring election.

Dr. L. A. Johnson of Plainview was operated on recently in an Omaha hospital.

Dr. A. W. Fitzsimmons, Omaha, has gone to London on business and for study.

Dr. W. Y. Jones, has disposed of his property at Wynot, and has located at Hartington.

Dr. Wm. H. Pallett of Crete, recently installed an up-to-date X-ray machine in his office.

Dr. F. J. Wearne of Omaha went to Rochester, Minn., recently to attend the Mayo clinics.

Dr. W. M. Green who a short time ago located at Laurel, has moved to Cumberland, Iowa.

Dr. H. M. Hepperlen, Beatrice, spoke to the Rotary club of that place recently on hospitals.

Dr. S. H. O'Neill of North Loup, has abandoned practice at that place and has gone east to prepare himself to enter the field of general surgery.

Dr. Fred Fouts, Stromsburg, will limit his practice to diseases of the eye, ear, nose and throat.

Dr. David Stonecypher, interne in the Swedish Mission hospital, Omaha is about to locate at Peru.

Dr. William Edmonds, Nebraska City, has gone to Wyoming to spend the summer on his homestead.

Dr. A. J. Faulk, Mitchell, has been to Pittsburg, Pa., to visit his mother whom he had not seen in forty-five years.

At the Bi-Weekly meeting, April 2, of the Lancaster County Medical Society, Dr. Dean Lewis, Prof. Surgery Rush Medical College, spoke on "Tumors of the Breast."

For his service in perfecting the gas mask Dr. Karl Connell, Omaha, has been awarded the Distinguished Service medal.

The York Clinic and Hospital has been incorporated by Drs. Moore, Shidler and King. Stock is to be offered to the public.

Dr. H. D. Clarke, Tamora, has been elected president of the Seward County Medical Society. He is said to be the youngest physician of the county.

Dr. E. C. Lynch, Valentine, was the victim of a brutal attack being rendered unconscious by a blow on the head with an auto crank in the hands of a ruffian.

Dr. J. J. Kiefer, for a number of years a practitioner at Bancroft, after a year of post graduate study, has located at Scottsbluff, succeeding Dr. N. H. Rasmussen.

Major H. L. Wells, Ft. Bayard, N. M., in an interesting letter to home folks at West Point, indicates that 900 tubercular patients as an average are being cared for at the Fort hospital.

Dr. W. H. Wilson, Epidemiologist for the State Bureau of Health, has resigned. No provision had been made in the general appropriation bill to pay the salary of this office, a lamentable oversight.

In an address given to the Kenesaw "Kommunity Klub," Dr. J. V. Beghtol, Hastings, emphasized the interdependence of people in every day life and showed how this is the basis of community spirit.

Dr. Wadsworth M. Elliott of Crete has associated himself with Dr. Cook of Lincoln. He still retains his office at Crete, but spends two days each week at Lincoln, where he devotes most of his time to nose and throat work.

After thirty-nine years of faithful service to the community, Dr. H. S. Summers, West Point, retires from practice, and is succeeded by Dr. L. F. Chapman. Dr. and Mrs. Summers return to the home of their youth, Latonia, Ohio.

Dr. Wilfred T. Grenfell, medical missionary to Labrador and a writer of human interest stories concerning life in the semi-arctic regions, has been in Omaha in behalf of the International Endowment Fund for work in Labrador.

Dr. Victor E. Levine, of the Creighton Medical College staff, plans a six week's expedition to Labrador and Baffin's Bay this summer. Dr. Levine some years ago was a member of a scientific expedition to the north under the auspices of Johns Hopkins University.

Nine embryonic doctors of the University College of Medicine, were elected to the Alpha Omega Alpha honorary medical fraternity, awarded for scholarship, the names follow: E. E. Simmons, and A. D. Davis, Omaha; T. F. Heider, Elm Creek; L. H. Lee, Greenwood; A. B. Anderson, Pawnee City; D. T. Ford, Lincoln; A. E. Bennett, Hot Springs, S. D.; W. A. Killins, Council Bluffs and L. D. Rose, Moravia, Iowa.

MARRIED

Dr. Lyle Kingery, whose parental home is Tilden was married, March 4, to Miss Margaret Reynolds of New York City. Dr. Kingery recently graduated in New York City and will practice his profession there.

DEATHS

Dr. B. H. Jordan of Medicine Lodge, Kans., died in Lincoln, April 4, aged 54 years. He had been a member of the army medical corps during the war with the rank of captain.

Dr. H. J. Arnold, Columbus, met sudden death in the early morning of April 13th, while going to the basement to attend the furnace. He was heard to fall and when his wife went to him, he was dead. Dr. Arnold was about 54 years of age, a native of Columbus and had been in practice in the same place for almost thirty years.

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CONTENTS

	Page
The Physician as a Citizen, M. S. Moore, M. D., Gothenburg, Neb.	161
Neurocirculatory Asthenia, Miles J. Breuer, A. M., M. D., Lincoln, Neb.	163
Technique For Complete Appendectomy, K. S. J. Hohlen, M. D., F. A. C., S., Lincoln, Neb.	174
A Civilian Surgeon's Story of the Great War, H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb. Formerly Lt. Col., M. C., U. S. Army	176
Etiology, Treatment and Results in 100 Cases of Backache, Arthur L. Smith, A. B., M. D., Lincoln, Neb.	179
Focal Infection and Its Relationship to Systemic Disease, A. F. Tyler, B. Sc., M. D., F. A. C. P., Omaha, Neb.	181
Medical Drainage of the Gallbladder, A. Sachs, M. D., Omaha, Neb. Professor of Internal Medicine at Creighton Medical College	184
Editorial	186
Society Notes	190
Hospital Notes	191
Notes About the Doctor	191
Hymeneal	192
Necrology	192
Books Received	192

THE PHYSICIAN AS A CITIZEN.*

M. S. Moore, M. D., Gothenburg, Neb.

The physician is, from the very nature of his calling a public character.

As a citizen, it is the duty of every physician to be ever vigilant for the welfare of the community and to bear his part in sustaining its institutions and burdens. He should be ever ready to give council to the public in relation to matters especially appertaining to his profession, as on subjects of medical policy, public hygiene and legal medicine.

It is, of course, his province to enlighten the public in regard to quarantine regulations, dietaries and arrangement of hospitals, asylums, schools, prisons and other public institutions; in relation to medical policy of cities and towns, as to drainage, ventilation, etc., and in regard to measures for the prevention of epidemics and infectious diseases.

What is the true aim of medicine? To prevent sickness by the practical teaching of the laws of hygiene, and by any and every other known means. It is better, safer and cheaper to prevent diseases, than to attempt to cure them once they are firmly established in the human body. The limitation and possible eradication of such typical diseases as tuberculosis, venereal diseases, typhus, typhoid and malaria resulting from the lack of proper sanitation and cleanliness; and of diseases, such as measles, scarlet fever, diphtheria, whooping cough, etc., due to overcrowding, would have an incalculable effect upon national vigor and longevity.

Infant mortality, which decreases with such mathematical precision as the prosperity of a community increases, has been found to be in inverse proportion to the degree of the sanitary conditions governing the milk supply.

Inspection and analysis of the water supply is one of the most important duties of the physician, for in the purity of its water lies the safety of the community.

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*Address of the President before The Nebraska State Medical Association, Lincoln, May 10, 1921.

The organization of all these measures, depends in the end, on the results of individual efforts of physicians. The education of the people can only be accomplished by the physician. A physician, to be a good citizen, must cooperate with fellow physicians, and with local and state boards of health. It is on these bodies that so much depends for the organization and direction of the more comprehensive measures of prophylaxis. But the faithful performance, by the attending physician, of the necessary measures of prophylaxis in every individual case of infectious disease is of the most vital importance.

One of the greatest modern examples of a great undertaking—one of the greatest that man ever essayed—which depended for its success largely upon the labor of physicians—is the completion of the Panama Canal. After the failure of the French—failure due to the dreadful and continued high mortality of the workmen, the United States took up the work. In the meantime great discoveries had been made along the lines of dissemination and prophylaxis of malaria and yellow fever, and by careful and strict application of the knowledge thus gained, the monumental task was accomplished. Today, the Panama Zone compares favorably with the more healthy parts of this country. Yellow fever, though on all sides, is there practically unknown. Gorgas and his collaborators won their laurels as "good citizens."

There is no profession, from the members of which greater purity of character and higher standard of moral excellence are required, than the medical profession; and to attain such eminence is a duty every physician owes alike to his profession and to his patients.

The evolution of medical ethics culminated in the adoption of "Medical Ethics" as formulated in the National Code, in Philadelphia, in 1847, by a body of representative men, now known as the American Medical Association. The code pleads for mutual forbearance, fraternal courtesy and a broad and generous fellowship, "that contumely, bickering and discord" may not fritter the power and influence of the profession for good. The effect of this organization on the status of the medical profession has been most marked. From comparative obscurity, where physicians were often the objects of derision and ridicule, the profession as a whole has risen until now it occupies as exalted a position in the citizenship of the country as any other class, and has reached a point where its personnel is, perhaps, the largest and most broadly educated class in every civilized community, and of all the professions, it is the one that can do real good for the benefit of the community and nation.

The effects of the "good citizenship" of a physician starts at birth—before birth even, for the prenatal clinic and hospitals play an important part in infant mortality and also on the welfare of the mothers. In fact the two cannot be separated as it is greatly due to the prenatal care that the mortality among infants has decreased. Through the out patient department and the children's clinic, the physician can follow the welfare of the child until it reaches school age. Through the good work of the physician, or from suggestions given by him, the child is protected against the dangers of disease, overcrowding, etc., and through supervision of factories and other institutions in regard to ventilation and sanitary measures, the influence of the good work will not stop with school days.

This is an age of combination and cooperation of large associations and undertakings, and it is only through a cordial and general cooperation of the practicing physicians with an enlightened public, that efficient prophylaxis can be established and maintained.

Firmly believing in the possibilities and capabilities of such organizations, I appeal to the medical profession for effective cooperation in an endeavor to combat what is, perhaps, the most insidious and dangerous disease that has ever threatened the civilized world—The Infection of the human family with the spirillum of Unrest, Radicalism and Fanaticism. This disease is more dangerous and deadly in its potential end results than any scourge with which science has ever had to contend—destroying as it does the usefulness of the individual; in many cases dismembering families and wrecking homes, and undermining the very foundations of governments. The daily reports of its effects plainly indicate its rapid spread, and the apparent failure on the part of the authorities to curb it by the usual processes. Never before in the history of the country was there a greater need of stabilizing influence. Properly classified, the malady should be placed in the category of mental diseases, and as such should be treated. There seems to be a loss of function of the reasoning powers, and inability to think coherently along the lines of cause and effect. This condition must be corrected, and the most effective method of treatment would very naturally be along the line of Suggestive Therapy.

It is generally conceded and acknowledged that the doctor is the confidant of the layman. He plays the dual role of father confessor and advisor. Who, then, is better qualified to analyze the causes of the alarming condition that confronts us, and administer specific treatment and establish proper prophylaxis, than the physician? He is the one who is in constant, daily touch with people of every class and station. He enjoys their respect and confidence. He knows their aspirations, their ambitions, their requirements, their necessities and their burdens. Because of these facts, and because of his broad education and experience, the medical man, the physician, may become a powerful factor in eradicating this disease of which the consequences are progressively becoming more and more disastrous.

In many cases, it will require only a word of sympathy, or explanation to those who are victimized by the unwarranted and seditious propaganda of unrest and radicalism sent out by the faithless and false in business and political life, for the purpose of bringing these deluded individuals back to normal, rational, right thinking, sane human beings.

Let the men of the medical profession realize the situation, and awaken to their duty, and their country's need. Let them, through cooperation and organization, by careful, well directed effort, perform this great service to the people and country, and fight this disease until all the supposed reasons of unrest, radicalism and fanaticism have been dissipated, and the rainbow of industrial promise again throws its magic arc across the eastern sky. Then we will have the satisfaction of knowing that we have been vitally instrumental in bringing about a normal condition of affairs and stabilizing the national situation; and in so doing will have rendered the greatest possible service, and raised, thereby, the standard of true citizenship.

NEUROCIRCULATORY ASTHENIA*

REVIEW OF LITERATURE AND REPORTS OF CASES IN DISCHARGED SOLDIERS.

Miles J. Breuer, A. M., M. D., Lincoln, Nebraska.

SYNONYMS.

Neurocirculatory Myasthenia.
Irritable Heart.
Effort Syndrome.
Disordered Action of the Heart (D. A. H.)
Cardiac Neurosis.
Soldier's Heart.
Cardiac Disorder, Functional, Neurotic Type, (Revised Manual of the Medical Department, U. S. Army.)

DEFINITION.

Neurocirculatory asthenia is a neurosis characterized by symptoms of cardiac insufficiency without an organic basis, and by other neuropsychic stigmata.

ETIOLOGY.

Age: From a study of the literature, it would appear that this is a disorder of the twenties and early thirties. We have yet to learn whether or not this is only apparent. Practically all the information we have on the disorder has been obtained from a study of recruits and soldiers of the above ages. However, case reports from civil life are beginning to appear, indicating the probability that it is widely distributed through all ages. A few recently reported cases, and histories obtained from recruits point definitely to its existence in childhood and adolescence; but no data are available concerning middle and old age.

Sex: Though most of the recorded cases from which a knowledge of the disease has been built up are in young men, this is because military mobilization has forced it on our attention. The forces that brought out the disorder in young men under war conditions operate on young women similarly, and more severely under civil conditions. Women are more subject to exhaustion and nervous irritation, and it will be surprising

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Footnote: All of the writers in the appended bibliography have been freely quoted, often verbatim. Specific references to the literature would have had to be so numerous as to confuse the text, and it has been deemed best to omit them.

*Published under authority from the Surgeon General of the U. S. P. H. Service.

if further study does not show a wide distribution of neurocirculatory asthenia in the female as well as the male sex.

Color, Race, and Nationality: Thus far, a study of the recorded data does not indicate any relation between these factors and the distribution of the disease.

Occupation: The fact that neurocirculatory asthenia was the commonest disorder found in the army examinations, speaks rather for the thoroughness with which recruits were examined during this war, than for any peculiar relation between it and military life. Careful examinations and histories have disclosed the fact that many of the recruits brought the condition with them from civil life, where it had existed for many years previously, usually since early childhood. The probable reason for the impression prevailing since DaCosta's time, of the military nature of the malady, is, that army recruiting brings up for careful examination those who would otherwise go through life in an unfit condition, but never suffering seriously enough and always lacking ambition enough to bring them up for a careful medical examination. Of course, war abounds in the psychic stress and physical exposure that furnish exciting causes for this condition.

The draft method of obtaining recruits during the late war offers the best explanation for the widespread attention attracted by this malady. Three or four papers by one writer during the civil war period and total oblivion since, have been followed by more discussion in the literature on this than on any other condition, since our country's entry into the world war. The cases remain latent, or attract no special attention during civil life, for the reason that they have found it possible to shift along on a standard of physical and mental exertion lower than the normal. These men avoid anything that savors of strenuousness, and under ordinary volunteering conditions, war is far away from them. But the draft reached out and gathered them in, in spite of their unwillingness. It is probable that many cases of conscientious objectors belonged to this neurotic class and sought fanciful explanations for an attitude that really had a pathological basis. Among the cases diagnosed at the draft examinations, sixty percent had earned their living in light, sheltered occupations in civil life. The only occupation found in the histories of these cases with sufficient frequency to excite remark is that of farmer. Whether or not the large proportion of cases coming from the farmer class has any significance, is not known.

Heredity: This is the most important of the predisposing causes. In fact, it is recognized as the essential cause of the disorder. In the vast majority of cases, the so-called exciting causes are powerless to produce the condition in subjects that heredity had not predisposed to it.

Family History: In the reports of various writers, neuropathic histories were obtained in between 50 and 75 percent of the cases, and included nervousness, alcoholism, chronic headache, irritability of temper, insanity, idiocy, epilepsy, tuberculosis, and various stigmata of degeneracy. Considering the conditions under which these data were obtained, it is probable that they do not fully cover existing facts, and that the figures should be higher.

Personal History: A similar proportion of cases presents a defective personal history. The weakness may be either physical or neurotic; in the individual case it is frequently both. Many of the men are imperfectly developed, undersized, with flat or elongated chests, and mental capacity below normal. "Weak," "poorly built," "phythisical, scrofulous, or splanchnoptotic habitus," are some of the terms that have been applied. There are cases of infantilism; of the various diatheses, hemorrhagic, exudative, lymphatic, and spasmophilic; of dyscrasias or endocrine disturbances; of so-called types, vagasthenic, angiospastic, erethic, feminine, eunuchoid, nervous instability, bed-wetting, and somnambulism.

In a certain proportion of cases, there is evidence that the condition is due to severe infection in early childhood. In a group of constitutional cases, histories of infection were obtained in the following order of frequency; measles, whooping cough, tonsillitis, gonorrhea, pneumonia, scarlet fever, rheumatism, typhoid fever.

These individuals have been "undeveloped" from early childhood. They have lacked ambition, courage, energy, aggressiveness, and endurance. The lack of a normal spirit of contest, or of participation is partly bound up with the inherent causes of the disorder, and partly an effect of it; the fear of the symptoms resulting from activity keeps them out of it. Usually there is a mental deficiency which keeps them from advancing beyond the lower educational limits under ordinary stimuli. As they have grown older, they have remained content at a low economic level. They are found at the job of fewest physical and psychical demands.

Nevertheless, it must be kept in mind that there is a definite class of men who appear physically robust and well developed, mentally alert, and with negative family histories, in whom the typical syndrome is present. In this respect, cases found in the draft examinations have been classified as follows:

1. Neuropsychic instability manifested before entering the service.
2. Anxiety neurosis and effort syndrome developed upon being sent to camp.
3. Normal until after severe infection, or upon undergoing the exceptional psychic stress or physical exposure of warfare.

In number, the first of these classes makes up about 75 percent of the total. The opinion has been expressed by some of the writers that many cases have been classified in the second and third divisions because the neurotic taint was not recognized early enough; that careful study and inquiry in these groups would have revealed that significant symptoms existed long before the draft in a vast majority of the cases, and that the strain of military life or severe infection precipitated the acute condition. The question arises as to whether the term "exceptional" as applied under the third of these headings, is relative; and what may be exceptional fright or exertion for these cases, would leave the normal man eventually unharmed.

Among the cases reported from civil life, nervous shock or fright seems to predominate as an exciting cause of the acute condition. Other reported causes are reflex irritation from the gastro-intestinal tract, physical fatigue with inadequate rest, insufficient recuperation following acute infection, and endocrine disturbance.

Theories of Causation: McFarlane has expressed the opinion that long-standing focal infection is a factor in the causation of the syndrome, having found such foci in practically all of his cases.

Carroll has reported many cases following trench fever, and attributes the syndrome to the effect of bacterial products. He compares the condition to anaphylaxis, notes the similarity of the symptoms, and advances the idea that the anaphylotoxin has a predilection for the parasympathetic nervous system, exerting a depressing effect thereon. Later work has shown that the parasympathetic nervous system is unaffected, but that the sympathetic system is directly concerned in the mechanism of the disorder.

British records contain frequent reports of men in whom the condition appeared suddenly and without apparent cause, after they had carried on apparently in perfect health for two or three years. These cases are explained on the basis of adrenalin mobilization and consequent sympathetic stimulation. The constant state of fear and anxiety in which these men found themselves for long periods, meant long continued liberation of adrenalin into the circulation. Probably this would presuppose a preexisting nerve instability in these cases. In men with a normal nervous system, military training and discipline is able to establish an inhibition from the higher centers over the primitive impulses in which adrenalin is mobilized.

This same class of cases, of men previously in apparent good health, is explained by Gaskell and Elliott, and by Barr, as being due to unbalanced tissue chemistry. They have demonstrated that the diet of these men was deficient in calcium. They find in the bone pains and tremors, a direct consequence of this deficiency. Adrenalin is called on in this condition as an emergency measure, as it renders tissue independent of its media, especially of the calcium content (Burridge). The combination in the soldier, of constant fear and anxiety under strong inhibition, and a low calcium diet, finally breaks down the sympathetic-parasympathetic balance.

Very little real evidence has been brought up to support the idea that the condition is due to endocrine disturbance. There is no doubt that in individual cases, disturbance of endocrine function may be associated. The exact relation of the endocrine factor is unknown, but appears to be accidental.

It has been satisfactorily demonstrated that there is a hyperexcitability of the sympathetic nervous system. The accelerator reflex arc and the vasomotor mechanism are especially concerned in this hyperexcitability, which the parasympathetic inhibition is unsuccessful in overcoming.

Experiments with atropin have shown that there is no diminution in the vagal tone. Under full doses of atropine, the effect of exercise on the pulse rate persists, but the vasomotor phenomena and the dermatographia disappear.

Psychosis is a powerful element in the disorder. There is always a maladjustment of the patient to his environment. Many of them feel that the world isn't giving them a square deal, and are especially vehement claimants for War Risk Insurance Compensation. The patient lives in constant and exaggerated fear of the symptoms, and usually of a sudden fatal ending, and his mind is constantly on his physical condition.

The fact that many of them have been told that they have heart disease, makes them worse. Instead of developing themselves physically, as their condition calls for, they are always cutting down. Their own mental attitude creates invalidism.

It is quite probable that not all cases are fundamentally the same. Further study and better knowledge will undoubtedly show us subdivisions, differing markedly from each other. The following basis for a classification of the different types suggests itself at the present time:

1. Psychosis: The cardiovascular symptoms are a manifestation of the individual's lack of harmony with his environment.
2. Neurosis: A disturbance of the balance between the sympathetic and parasympathetic systems.
3. Muscular deficiency: Defective inheritance without physical symptoms.

PATHOLOGY.

No necropsy records have thus far appeared in the literature, and the discussion will necessarily be limited to functional pathology.

Careful and extensive physical, laboratory, and electrocardiographic examinations have demonstrated that there is no organic defect in the heart, nor any structural cardiac change.

Tests of cardiac reserve capacity have demonstrated that this function of the heart is normal. These tests are based on the fact that there is a "delayed rise" in blood pressure, 50 to 90 seconds after the cessation of exercise to the point of fatigue. The number of foot-pounds of work done to produce this delayed rise, is a measure of the cardiac reserve capacity. In case of myocardial disease, there is a definite decrease in cardiac reserve capacity. This finding of normal cardiac reserve capacity in N. C. A., bears out a priori the empirical findings that graduated exercise has no beneficial effect in the treatment of the disease. Exercises to strengthen the heart are useless, as the trouble lies elsewhere.

Orthodiagrams show that there is no enlargement of the heart in this condition, and no diminution of the heart size after exercise.

There is a definite decrease in the strength of skeletal muscles, as shown by tests with the Martin spring balance. It is less marked in cases of short duration, for instance those in which the condition was brought on acutely by infection or shock. This weakness is due to the "soft" condition of the patient, caused by lack of exercise.

In measured-work tests, N. C. A. patients fall far short of normal. This is due to:

1. Their inherent lack of drive or push to urge them to work; 2. Definite weakness of skeletal muscles; 3. Fear of bringing on symptoms.

The experiments of King have shown that the fatigue in this disorder is an actual physical phenomenon, and can be measured. It is not psychic in origin. He used Ryan's "white vasomotor reaction," observing the time of appearance of the white streak after stroking the skin with a blunt instrument. The heightened fatigue probably depends on the same factors as the muscular weakness.

In organic heart disease, the tendency to dyspnea depends on a decrease in the vital capacity of the lungs—the difference in volume between maximum forced inspiration and maximum forced expiration. The normal standards for males are:

Height	182.5 cm. and over	5100 cc.
	173.5 to 182.5 cm.	4800 cc.
	below 173.5 cm.	4000 cc.

The vital capacity of normal individuals does not go below these standards. In a group of N. C. A.'s studied, 80 percent of the patients had a vital capacity of 90 percent or more of the standard; 93 percent had a vital capacity of 85 percent or more of the standard. Neither the number of cases falling below the standard, nor the degree of deficiency, indicates that the dyspnea depends on a loss of vital capacity. This is checked up by clinical findings; it is found that patients with a severe attack of dyspnea can answer questions with long sentences if their attention is secured.

The CO_2 combining capacity of the blood falls within normal limits. The blood pressure is high; the average for patients up and about is from 135 to 170. After exercise, the systolic pressure rises from 10 to 20 percent, while the diastolic frequently drops. The average erythrocyte count is 5,000,000, and hemoglobin, 90%.

The average leucocyte count in a group of cases studied at one of the cantonments was 8,290; the highest 16,350; the lowest 4,700. The average differential count was: polymorphonuclears, 56%; eosinophiles, 4%; lymphocytes, 32.6%. There was an eosinophilia in 75 percent of the cases of from 1.5% to 13%. Injection of epinephrin in normals causes a 28% rise in leucocytes; in N. C. A.'s a rise of 48%. Exercise causes a 5.2% increase in leucocytes in N. C. A., and 22.7% in organic heart disease; N. C. A. patients do not make enough effort to cause a normal reaction.

Gastric secretion determinations contrasted with normals eating the same food and under the same physical conditions, show a higher free and total acidity. In case of free acidity, the curve is of the same shape, the N. C. A. giving a gradual rise up to 50 at the end of 75 minutes, and then an imperceptible fall to the end of 135 minutes. The acidity for normals is about 35 for this same time. In case of total acidity, the curve for N. C. A.'s begins to drop at about the same time as the normal, but falls less rapidly. The average total acidity for N. C. A.'s in 105 minutes was 85; for normals 65. The findings for N. C. A. are higher than the average, but cannot be called abnormal. No case of N. C. A. had low findings.

In a group of cases studied by Wearn and Sturgis with reference to the Goetsch reaction, 60 percent were found to have an increased sensitiveness to epinephrin. In view of the fact that epinephrin has a selective action on the sympathetic nervous system, the conclusion would seem warranted that the symptoms of this disorder are due to sympathetic hypersensitiveness. But, on careful clinical analysis, no difference was found between the epinephrin sensitive group and the non-sensitive group. Therefore, either the clinical condition in N. C. A. does not depend on factors underlying the positive reaction; or, as other things suggest, there are two or more groups of cases, differing in etiology and pathology.

Minor associated pathological conditions are frequently reported: Foci of infection about the mouth and nasopharynx; flat, elongated chests; splanchnoptosis; atonic or spastic intestinal stasis, gastric atony and inflammation, chronic bronchitis, arthritis, and flat foot.

CLINICAL SYMPTOMATOLOGY.

There is a certain physiological syndrome that follows effort in the normal individual. The first thing to appear is dyspnea, which becomes manifest during the effort, and persists for some time after it has ceased. During the effort, there is also a consciousness of the heart's action, a giddiness or faintness, and a sensation of fatigue. After the effort has ceased, there is tremulousness, aching of the limbs, and a feeling of exhaustion. Later on, a stiffness of the muscles supervenes, and a feeling of lassitude, or actual malaise. Extreme effort may result in precordial pain, either a mere aching or very violent pain. Further items in the effort syndrome are a rise in the pulse rate and blood pressure, dilatation of the nasal alae, and bringing into play of the accessory muscles of respiration.

Under the stimulus of excitement, a greater or less proportion of these signs appears. The syndrome follows every serious illness.

The difference between health and neurocirculatory asthenia, is one of degree. A gradual transition may be found in various individuals, without any definite boundary line between the healthy and the pathological states. In N. C. A., the syndrome is produced by a smaller effort, one which in health would produce no effect. The smaller the effort that produces symptoms, the more serious the malady. Boas has classified the cases as follows, according to physical findings:

1. Erethic group, in which vasomotor instability predominates, flushing; coldness, sweating, and clamminess of hands and feet; cyanosis of the hands extending above the wrists; axillary and palmar sweating; mott-

led skin; dermatographia; giddiness, vertigo, fainting spells, sometimes with unconsciousness for long periods.

2. Splanchnoptotic type: gastro-intestinal symptoms; spastic or atonic constipation; epigastric pain; vomiting.

3. Neuropsychic group, with neurasthenias, psychasthenias, anxiety neuroses, insomnia, and constitutional and mental inferiority.

4. Respiratory group: dyspnea is predominant; there may be cough, expectoration of thin mucus, or asthmatoid symptoms.

In all of these groups, but more especially in the third, it is the rule to find the patients neurotic on inspection. They have an anxious appearance, are listless, and seem to lack interest and ambition. Their work is desultory; when they no longer feel like working, they quit. They are introspective to small ailments, and trivial sensations are magnified to acute suffering. Having been told they have heart disease, many of them become hypochondriacs.

It must be kept in mind, however, that there is a small group of well-nourished individuals, with mentality equal to or above the average, who suffer from the syndrome.

Dyspnea is characteristic of all the cases. Usually, the dyspnea is purely subjective, without any objective evidence. In some cases, there is an actual tachypnea, due probably to an irritability of the respiratory center. There is never any actual difficulty in obtaining air, and the distress is apparent, not real; when the patient's attention is concentrated on something else, it vanishes.

Subjective Symptoms: Other subjective sensations are pronounced. Precordial pain is usually found in a well defined area. Hyperalgesia of the chest wall is a frequent finding. Consciousness of the heart beat, fluttering in the chest, pounding of the heart, a sense of constriction, suffocation, or oppression across the chest, are frequently complained of. The complaint of utter exhaustion is characteristic. Frequently the patients state that they cannot rest at night. On account of these subjective symptoms, the patients are very careful not to injure themselves by physical effort. The much more unfortunate victims of organic heart disease do not hesitate to take chances, in spite of the limitations of their cardiac reserve.

Physical Findings: The area of cardiac dullness is not increased. However, a pronounced and widespread cardiac impulse may give the impression of cardiac enlargement; it is not infrequently that the whole precordium and epigastrium are seen to pulsate. This pulsation is usually more evident to inspection than to palpation.

Pulse: The pulse rate at rest averaged 99 in the cases which I observed, the lowest being 72 and the highest 140, and the greatest number of cases betwen 90 and 100. The increase produced by exercise usually extends to between 120 and 160. No extremely high rates were seen. In many cases, the patients were unable or unwilling to go through the standard test exercise. Emotion, reference to a critical incident in the patient's life, or the excitement of the examination, were often sufficient to raise the pulse rate as much as did the exercise. In some cases, an actual slowing of the rate by exercise was observed, where the rate was already high, due to excitement, and the patient was calmed down by his exercise. Usually, holding the breath would lower the rate 10 to 15 beats. When a basic rest level is determined for the pulse, it is found that in N. C. A., the rate returns to this basic level after exercise in about the same time as does the normal heart. Sudden changes in heart rate are frequently seen. Extra systoles are common.

Heart Sounds: Just as is true in the normal heart, there is nothing constant in the character of the heart sounds. The first sound at the apex is variously recorded as weak and shuffly, booming, and short, sharp, and snappy, so as to resemble mitral stenosis. The character of the sound depends very much on the rate of the heart, and this is a very labile factor. There is widespread agreement in reporting an accentuated pulmonic second sound.

Murmurs: Soft, systolic, apical murmurs, not transmitted, heard loudest in the supine position, are the most frequent adventitious sounds reported. Cardiorespiratory murmurs are common; also a basal systolic roughening or bruit heard best in the second or third left intercostal spaces close to the sternum, and more pronounced in the supine position. All of the above are heard more readily in thin chested patients.

Thrill: A great deal has been written on the thrill found in this condition. This is usually reported as a thrill like impulse to palpation, or a thrill like, split, or broken first sound at the apex. During the early days of the draft examinations, many of these were called mitral stenosis. However, the thrill is systolic in time; it quickly disappears in the supine position (in contradistinction to that of mitral stenosis, which is accentuated on lying down); and it depends on the violence of the heart beat, being infrequent in very high rates, and being diminished or caused to disappear when the rate is controlled by deep, slow breathing.

Adventitious sounds have only an accidental relation. The following adventitious sounds, reported present in N. C. A., have been found by King in 500 normal men, the soundness of whose hearts had been demonstrated by their having done many months full duty:

Third heart sound.

Reduplication of first sound at apex.

Systolic apical click.

Systolic murmur at apex present in recumbent position, absent in erect posture.

Cardiorespiratory systolic murmurs limited to inspiration.

Cardiorespiratory murmurs present in both phases of respiration.

Accidental systolic murmurs.
Cardiorespiratory diastolic murmurs.

Occasional extrasystoles.

DIFFERENTIAL DIAGNOSIS.

Neurocirculatory asthenia must be differentiated on the one hand from organic heart disease, to which it bears a superficial resemblance, and on the other, from tuberculosis and hyperthyroidism, whose clinical pictures are quite similar, but whose objective findings are distinctive. The accurate recognition of the condition is of the highest importance. Great harm is invariably done by telling one of these patients that he has heart disease. If a N. C. A., patient is managed along the same lines as are either organic heart, tuberculosis, or hyperthyroid cases, his disorder will be aggravated rather than benefited. In most respects, this condition is a matter for the psychiatric specialist, nevertheless its diagnosis in the large proportion of cases, devolves on the general medical man. The chances are against the civil patient's seeking a neuropsychiatrist; he usually turns up in the hands of the cardiac, respiratory, or gastro-intestinal specialists, and unless the diagnosis is properly made, is treated for disorders which exist only as reflex symptoms.

In general, the diagnosis of neurocirculatory asthenia is made on the basis of a neuropsychic taint, and the exclusion of organic lesions.

Organic Heart Disease: In considering organic heart disease, it must be kept in mind that not only valvular disease is meant, but infectious and degenerative conditions of the heart muscle. Though it has become a trite saying that valvular disease is compatible with cardiac efficiency for a lifetime, and that cardiac insufficiency may be unaccompanied by any signs in the cardiac area, a reminder to that effect will not be amiss at this point. It is playing safe never to make a diagnosis of organic heart disease on the basis of murmurs alone. Dyspnea, palpitation, and pain of purely cardiac origin are always accompanied by cyanosis, slight, moderate, or extreme. A majority of the following findings are required to establish organic heart disease:

History of rheumatic fever, diphtheria, pneumonia, syphilis, or other severe infection,

Definite cardiac enlargement,

Diastolic murmurs independent of respiration,

Systolic murmur at apex if very loud, especially if it masks the first sound, points to the mitral valve. The transmission of the murmur depends on its loudness. The slower the pulse, the more important the presence of the murmur.

Loud systolic murmurs at the base with thrills point to pulmonic or aortic stenosis.

Serious arrhythmia, referable either to heart block or auricular fibrillation. The effect of digitalis must be eliminated as a consideration.

Signs outside the cardiac area
- Congestion of the veins of the neck
- Enlargement of the liver
- Edema of the feet and legs; if in bed, of the sacral region
- Edema of the lungs
- Ascites or hydrothorax
- Cyanosis

Hypertension

Very severe anginal pain favors organic disease. Nervousness, tremor, and sweating favor neurocirculatory asthenia.

The lesion for which N. C. A. is most frequently mistaken, is mitral stenosis. Mild grades of mitral stenosis produce no subjective symptoms. The diastolic murmur of mitral stenosis is so constant that the diagnosis is not justified unless the murmur is heard. In mitral stenosis, there is no tachycardia at rest; in N. C. A., even at rest, a normal rate is unusual. The presystolic roughening of N. C. A., frequently confused with the presystolic thrill of mitral stenosis, is shorter; it occurs in connection with a rapid rate (the heart rate in mitral stenosis is slow); the associated thrill is systolic, not presystolic; the murmur is best heard in the erect posture (in mitral stenosis it is best heard in the recumbent position); and it disappears following the inhalation of amyl nitrite, while that of mitral stenosis becomes louder.

Tuberculosis: Confusion of N. C. A. with tuberculosis occurs when the physical findings in the latter are obscure. Coexistence of the two conditions is rare. The importance of tuberculosis in early childhood as an etiological factor in N. C. A. has not been determined.

Pain in the left chest is characteristic of N. C. A., and not of tuberculosis. Tuberculosis patients respond poorly to graded exercise; N. C. A.'s not at all. In the former, a rise in temperature is found 20 minutes after the cessation of exercise, and this fact has been used in differentiating the two conditions. Exercise also serves to bring out rales in pulmonary cases. The background of nervous instability and psychic maladjustment is absent in tuberculosis.

Other asthenic conditions, such as hookworm disease, early Hodgkin's disease, early malignancy, chronic focal infection, etc., may be mistaken for this condition.

Hyperthyroidism: The diagnosis of N. C. A. from hyperthyroidism may be very difficult in the individual case. Some writers thought the two conditions identical during the early days of the war. Emphasis must be laid on the point that a slightly enlarged thyroid, plus tremors of the hands and an easily excitable heart, does not necessarily mean hyperthyroidism. At the present state of our knowledge, we are not justified in making that diagnosis in the absence of the ocular signs and an increase of basal metabolism. The Goetsch test is of no value in differentiating the two conditions, as it is probably not specific.

N. C. A.'s do not have an increased basal metabolism, are not aggravated by thyroid feeding, have a normal sugar tolerance, and are aggravated instead of benefited by complete physical and mental rest. A very important point is, that N. C. A.'s lack the energy and "drive" so characteristic of hyperthyroidism.

PROGNOSIS.

With respect to prognosis, these patients have been divided into three classes:

1. The cases which gave a normal history up to a certain point, and date a sudden onset from severe infection or psychic trauma, are given a good prognosis for functional recovery. Whether or not they are theoretically constitutionally deficient, in practice they can be brought back to the same degree of adjustment with their environment which seemed to suffice them before the onset.

2. The mild permanent class, whose neurotic manifestations predominate over the psychic, can recognize their limitations, and so adapt themselves with respect to their physical and mental existence, that they can make a living and keep free from symptoms. They will never be normal, but they are more or less valuable citizens.

3. The marked psychoneurotics, from the point of view of the present knowledge of the subject, will remain permanently hopeless, and helpless spongers on the family and community.

TREATMENT.

The treatment of this disorder belongs in the domain of the psychiatrist.

It must be recognized that the condition is due to a fundamental nervous instability, and cannot be cured in any sense of the word. Efforts must be directed toward adjusting the individual to the conditions under which he finds himself. On the other hand, if it is borne in mind that the symptoms depend on the patient's general condition, and on various aggravating influences, much benefit can be rendered him. Thus, the eradication of all foci of infection, the removal of the effects of intestinal stasis to which these cases seem predisposed, and the building up of the general health, may work wonderful results with the symptoms.

The management includes two main requirements; distracting the patient's attention from his heart, and finding him a place in the economy of the community where he can feel that he is doing his part, without at the same time suffering from the effort it requires.

It is easier to handle cases who have never been told nor entertained the idea that they had heart disease. Getting rid of the rooted idea that they are in danger of sudden death from heart failure, is a heroic task. The disease should be explained to them as a nervous disorder, without reference to the heart. The fact that they are in no danger must be emphasized. They must be encouraged to take part in all the exercise they can stand. Much encouragement, praise, and moral support is necessary to overcome their fear and aversion to exertion. The inactive life has resulted in a vicious cycle which cannot be broken by radical methods. Many will fail to respond to any discoverable incentive.

In general, graded exercises are of no benefit. The patient reaches a certain point beyond which no amount of training will enable him to progress. This much exercise at least, he should be encouraged to carry on. Exceptions are found in cases of clerks and sedentary classes, developing the syndrome upon being too suddenly brought into the heavy exertion of military life; these have made progress under graded exercises. The same is true of cases, previously apparently normal, developing the syndrome suddenly following severe exposure or infection.

In case symptoms become annoying, especially the insomnia and pain, the ordinary sedatives are effective. Bromides, chloral, veronal, and the various proprietary sedatives have been found useful. The patient should be discouraged from becoming dependent on their assistance.

The four cases which follow, are typical, and were encountered while the writer was engaged in examining claimants for War Risk Insurance compensation:

Case 1.—J. W. H., white, age 26. States that previous to enlistment he had always been able to do his work on the farm. November 1917 had septicemia resulting from a scratch on a finger by a rifle; in hospital three weeks. January 1918 had a severe attack of pleurisy; in hospital three months. On discharge was weak and nervous; unable to walk because of pain in the arches and numbness of the legs.

Present Complaint: Weakness; actual deficiency of muscular power; early fatigue. "Nervousness" consisting of tremors of the limbs, twitching of the leg muscles, inability to sit still. On the slightest exertion he suffers from severe dyspnea, precordial pain, vertigo. Complained especially of frequent "nervous attacks" which were subjectively characterized by a fluttering in the chest, vertigo, tremor of hands and feet, and dyspnea. The attacks seem to come spontaneously, without any exciting cause.

Examination: Face flushed, eyes deeply sunken and brilliant; countenance anxious. Patient appears well nourished. Head, neck, and lungs negative. Diffuse pulsation visible and palpable on left side from fifth interspace to costal margin. Left border of heart at fifth rib, 10 cm. to left of midsternal line; shape normal, position diagonal. Systolic sound diffuse, lacks clearness; a pronounced roughening or grating is audible, more pronounced over right ventricle than left. Second sound weak all over the chest. No murmurs; rest rate 100; twenty jumps on one foot raise it to 132. This amount of exercise caused so much dyspnea that he was forced to discontinue it; complained of such weakness of the legs that he was unable to jump any more. After exercise he had a coarse tremor of the extremities, which continued for 3 minutes; after that length of time, the pulse rate was 104.

Ocular signs of hyperthyroidism negative. Reflexes active. Arches completely fallen in both feet.

The patient was observed in one of his "nervous attacks." His face, usually flushed, became still more so; but there was no cyanosis. The facial expression became set; the eyes took on a glassy stare. He would not speak unless pressed for a reply, and then spoke with difficulty; violent trembling in all extremities, severe dyspnea. Pulse regular, full, rate 100; pupils dilated, limbs rigid. The attack lasted 10 minutes, after which the trembling gradually subsided, an animated expression returned to his face, and the pulse fell to 76.

Wassermann test. negative; erythrocytes 5,500,000 leucocytes 8,000. Goetsch test negative; sugar tolerance normal; no aggravation of symptoms by thyroid feeding. No response to graduated exercise. Bromides and veronal proved effective in controlling excessive restlessness and insomnia when these were troublesome, but had no effect on his general state.

It is doubtful if the infection in this history has any causal relation to the neurosis. Although the patient had been assigned to the infantry, he had actually done very little duty there. He had actually never carried his real share of the farm work at home. He is a constitutionally defective case, aggravated temporarily by the military service, the aggravation being more psychic than physical in nature.

Case 2.—L. T. age 27, white, farmer. History previous to military service negative for infections. His relatives state that he had always been nervous, but no more definite information is obtainable. In the Army, he had a nervous breakdown in February, 1919, and remained sick in quarters until April; then he was sent to a hospital where he remained until his discharge in August. The symptoms of which he complains began about February, and persist to date. There is no history of infection.

Symptoms: Precordial pain, with vague radiation (almost any region inquired into for radiation was answered positively), including side, back, abdomen, and shoulder. Sense of weight and pressure in the chest. Palpitation, vertigo on change of position; starting from sleep, and frequent nightmares. Twitching of muscles, and profuse axillary perspiration. On slightest exertion, precordial pain, palpitation, dyspnea, and excessive fatigue. Feels irritable, and wants to weep when things go wrong. Constant coughing up of a small amount of sputum.

Examination: Patient thin, but not emaciated. Countenance worn and anxious; movements slow. Head and neck negative. Lungs negative. No abnormal pulsations visible or palpable. Apex beat in 5th interspace, 9 cm., from midsternal line. Shape and position normal. Apex beat powerful to palpation and auscultation. Soft, systolic murmur at apex only; not transmitted; not accentuated by exercise. Pulmonic second less than aortic second. Pulse regular; rest rate 88; performed only a small part of the prescribed test exercise and then stopped. Pulse rose to 100, returning to 84 in 2 minutes. Marked dyspnea and perspiration on exercise.

Neuropsychiatric examination by Dr. Williams: History of irregular conduct; emotional disturbance; crying, swearing, and mild confusion when crossed. Reactions under stress and chaotic. Depressed, and continually worrying about his family affairs. Diagnosis: Psychosis, undifferentiated.

Orthopedic examination by Dr. Orr: The patient has chronic arthritis of the right knee; internal semilunar cartilage detached. Surgical operation advised. (This was later performed).

The patient was urged for a long time to accept treatment at a special institution where the proper kind of care could be given him, as he was unable to care for himself and his family. However, he did not seem to have sufficient ambition to make the decision, and is still drifting.

This is a constitutional defective case that should never have been admitted to the service. His history is obscure, but it is impossible to conceive that he ever did full duty. The associated psychosis and arthritis are characteristic .

Case 3.—J. F. H., age 28, white; civil occupation automobile-mechanic. History previous to military service, negative. In January, 1918, he was in a motorcycle collision, receiving numerous injuries, including fracture of the skull and two long bones. The symptoms date from that time. Has also had frequent, severe tonsillitis.

Present Complaint: Poor eyesight; poor hearing. Cannot control his speech; says the wrong things without being able to prevent it. Constant pain across the front of the chest and in the small of the back. Chest pain, aggravated by the erect posture, compels him to stoop. The pain is worse on exertion; bears no relation to the weather. Numbness in the legs on walking; occasional vertigo. Dyspnea and fatigue on the slightest exertion, accompanied by exacerbation of the chest pain. Efforts to get air are painful. Axillae and palms sweat readily. Is easily excited and irritable. Very sensitive to sounds and lights.

Examination: Patient is well developed and well nourished. Neurotic appearance. Tonsils large and inflamed. Many crypts containing caseous material. Lungs negative. Heart normal in size and shape. The first sound is roughened. No adventitious sounds. Rest rate 84; after exercise, 136. Urine, specific gravity 1020 and otherwise negative.

The patient's refraction was corrected, his tonsils removed: he was placed in training at work which he could endure physically. He manages to endure his lot, but there has been little change in his condition.

This is an example of onset brought on by psychic trauma. The patient always became very agitated when he recalled the motorcycle collision, the circumstances of which came as a severe psychic as well as physical shock. The elimination of the associated focus of infection had little effect on his condition.

Case 4.—J. T. H., age 26, white; civilian occupation, hospital attendant. Premilitary history, negative. Began having cardiac symptoms four or five months after induction into the military service. At first he did not know what it was, and attributed his condition to "laziness." He continued to get worse, and had to force himself to keep going. Overseas he was put in a hospital, and remained there under cardiac management for about four months, with no improvement. He has been advised by every doctor who saw him that "rest would do him more good than medicine." He has followed that advice, with no benefit whatever.

Present complaint: Slight exertion produces dyspnea, precordial pain and sensitiveness, "queer feeling" in the precordium, and profuse sweating. He has attacks of weakness, not depending on exertion or excitement, and lasting a few minutes. Further symptoms are dizziness, tremor of various muscles, especially of the extremities, palpitation. The above cardiac symptoms do not depend consistently on exertion; they appear without cause or reason, and disappear in the same way. The most consistent symptom is tachycardia, which is persistent, the rate remaining between 108 and 120. No gastro-intestinal symptoms. Spasmodic sensation in the throat. Lost 10 lbs., in the last three months. Appetite normal, bowels normal, slight cough, no expectoration. Sleep poor. Axillary and palmar sweating. Parasthesias in the limbs on holding them for some time in one position.

Examination: Small, florid-faced, nervous appearing. Chest poorly nourished; clavicles prominent. Increased tension of sterno-mastoid and scaleni on right side. Kronig's isthmuses, right 4cm., left 6 cm. Diminished resonance all over right side, greatest at apex; expansion good and equal. Large bubbly rales all over both lungs during both phases of respiration. Heart, left border at 5th rib, 11 cm. to left of midline and 1.5 cm. to right of parasternal line. Apex beat not palpable. Visible but not palpable epigastric pulsation. Heart sounds faint; no adventitious sounds. Rest rate 104; after exercise, 140. Temperature 98.4, not increased 20 minutes after exercise, nor toward evening. Blood pressure, 110-140.

Limitation in field of color perception for blue.

X-ray examination discloses moderate fibrosis in both upper lobes, with small calcified areas; no evidence of activity. Heart: slight increase in size of left ventricle; otherwise normal.

It is probable that the associated tuberculosis in this case is quite accidental, and has no relation to the neurosis. The symptoms are purely neurotic, while all physical signs indicate that the process has been inactive for a long time.

Cases I and II are not earning their salt as members of the community, and in view of the present knowledge of this condition, the prognosis is unfavorable. Case III is receiving training under the Federal Board in a sedentary occupation in which he will earn a living. The moral value of this training as encouragement and as restitution for the injury done him, is no small part of its value. His prognosis for improvement is good. Case IV is, and always was able to earn a living. His main trouble is that he lives in constant fear of dire results from his heart, and this is the only condition needing treatment.

The following is an analysis of twenty cases of neurocirculatory asthenia, encountered by the writer while serving under the U. S. Public Health Service, examining claimants for compensation under the War Risk Insurance Act.

1. Average age, 25 years	
2. No. of cases that had been assigned to full military duty	12
3. No. of cases assigned limited military duty	7
4. No. of cases which did no duty while in service	1
5. Previous occupation heavy labor, (as per history)	8
6. Previous occupation light labor	5
7. Previous occupation sedentary	7
8. Positive history of nervous stigma before military service	6
9. Negative history of nervous stigma before military service	1
10. History of nervous stigma before military service not elicited	13
11. Infection probable cause of onset	5
12. History of infection, doubtful as cause of onset	5
13. Psychic trauma cause of onset	6
14. Gassing as cause of onset	2
15. Soft systolic murmurs	4
16. Roughening of first sound	4
17. Systolic click	1
18. Arrhythmia	0
19. Enlarged heart	1
20. Very slight enlargement of heart	3
21. Right sided enlargement of heart	0
22. Edema, cyanosis, hepatic tenderness	0
23. Psychoses	2
24. Nervous facies and attitude	17
25. Motor aphasias, occasional transitory	2
26. Inactive pulmonary tuberculosis	2
27. Enlarged thyroid	3
28. Joint symptoms	3
29. Response to treatment, slight	2
30. No response to treatment	14
31. Now earning living with difficulty	4
32. Earning less than a living	11
33. Totally dependent	5

These cases are all men who got past the cardiovascular boards and were assigned to duty. The manifest cases were all weeded out, and never got far enough to come under the War Risk Insurance Act. These cases, latent at the time of their examination, were not recognized, either because they went through early, before sufficient experience had been gained to know what to do with them; or because they belong to the group which showed no symptoms until after the acute onset attributable to stress, infection, or psychic trauma.

All of these men are under the impression that their military service is totally responsible for their condition, which they consider serious heart disease. They feel entitled to the care and support of the government, and are among the most vehement and exacting claimants for compensation.

Some of them can make a living at light work. Some can improve under specialized treatment, or rather training. For a certain percent, the prognosis is hopeless. As would naturally be expected from a study of the disease, their families are in many cases unable to take care of them, and they become dependent on public care.

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TECHNIQUE FOR COMPLETE APPENDECTOMY.

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The idea oocurred to me that if we can close an enterotomy wound, punctured wounds, anastomosis and many various operations upon the intestines successfully and safely, why then do the crude appendectomy that we are doing?

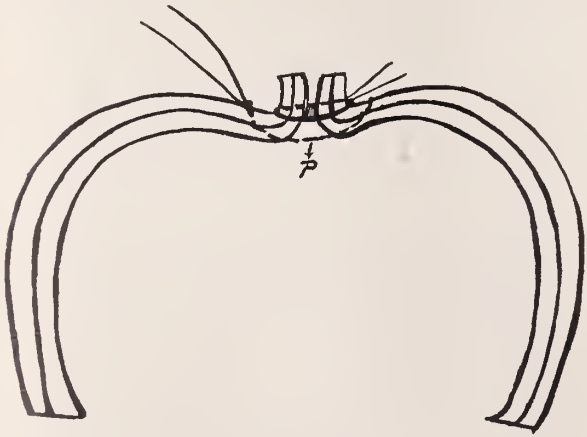


FIG. 1.

FIG. 1.—Ligation of base.

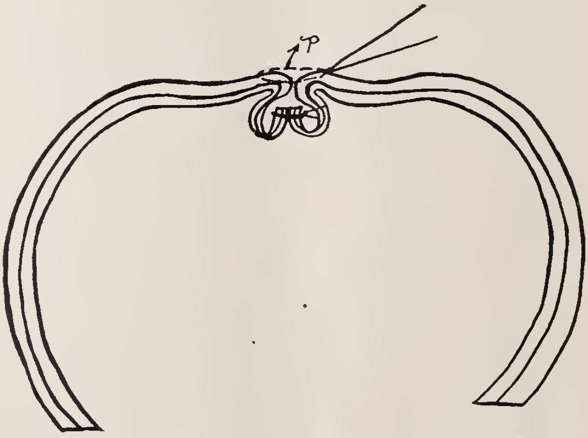
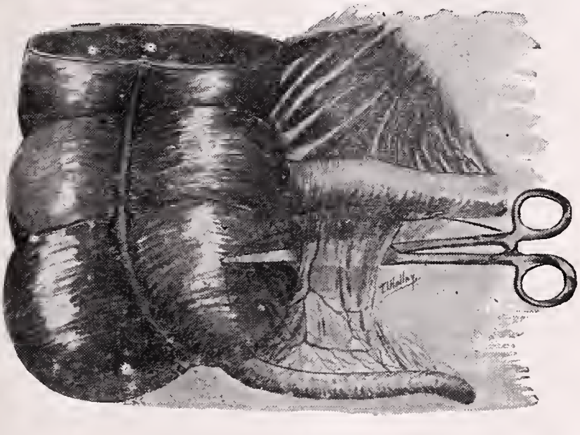
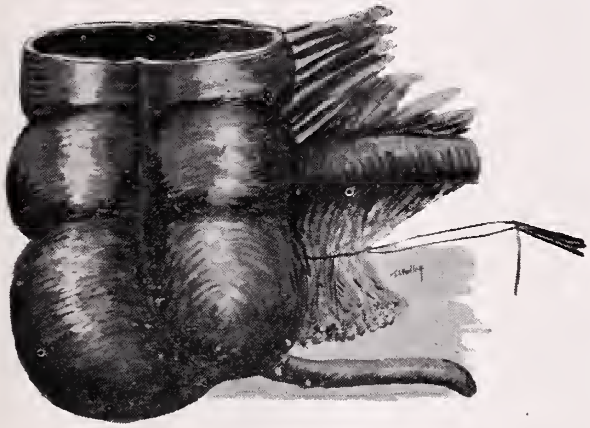


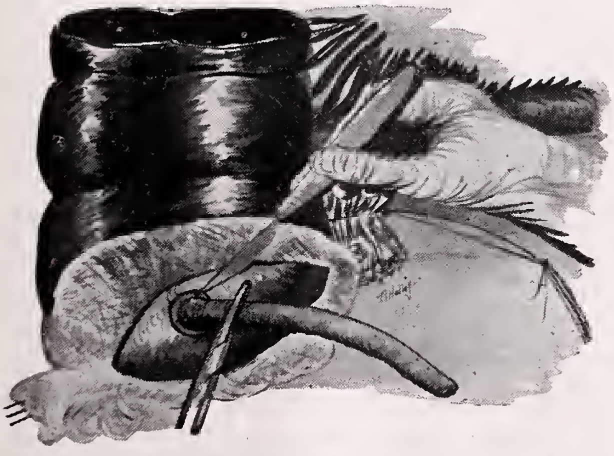
FIG. 2.

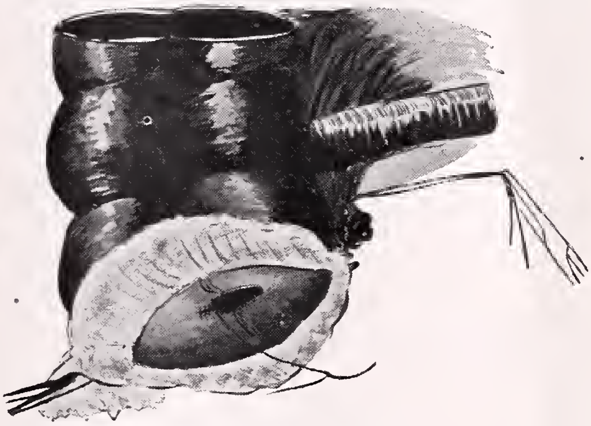
FIG. 2.—Ligation and Burying. P.—Purse strings.

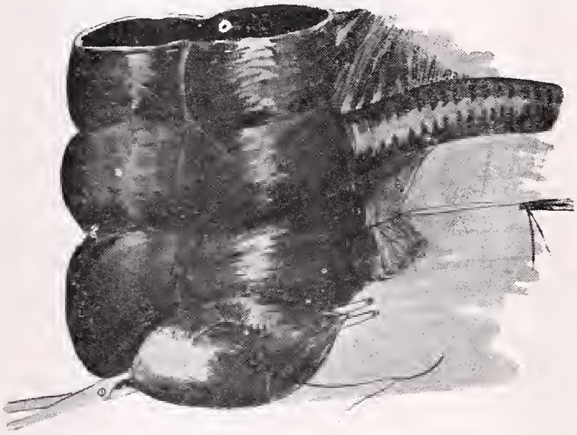
I refer to the method of leaving the stump, be it inverted or not. There has much been written in regard to the proper method of disposing of the stump. We have heard much of hemorrhage occurring from the unligated crushed stump and about abscesses forming in the sac, (Fig. 2), produced by the inversion of the ligated stump. It has even been mentioned that these abscesses may rupture into the peritoneal cavity. It often occurs that the appendix has entirely sloughed off and we suture the caecum without any trouble whatsoever. The technique as practised by the writer is not much more difficult than the usual appendectomy and does not consume any more time. Why not then remove the entire appendix? This procedure removes the entire diseased organ. It may here be stated that this technique is not applicable in all cases, for example, where the caecum is covered and attached by dense adhesions and in the presence of abscesses where it is harmful to manipulate to a greater extent.


III.—Method of ligating Meso-Appendix.


IV.—Meso-Appendix separated from Appendix.


V.—Bowel clamped and entire appendix cut out of wall of Caecum. (Forceps should have been placed, nearer to base).


VI.—Continuous Suture through all layers.


VII.—Lembert Suture.

TECHNIQUE.

The usual incision is made in the abdominal wall. The caecum and appendix are brought up into the wound. The mesoappendix is next ligated (Fig. 3), and cut loose from the appendix, (Fig. 4), Next the caecum is clamped with small rubber covered clamp just far enough away from the appendix to allow for suturing the intestinal wound. The base of the appendix is caught with forceps.

Now a lap sponge is placed beneath rubber covered clamp to protect underlying tissues. A knife is taken and appendix cut from the wall of bowel, or if preferred it may be shaved off leaving a somewhat smaller opening, (Fig. 5). Gauze is used to mop secretions present and cut surface wiped with sponge soaked with alcohol. A continuous suture is now passed through all layers, Fig. 6). This is covered by a continuous Lembert suture, (Fig. 7). The stump of the mesoappendix may be tacked over this if desirable. Abdominal wound is closed in the usual manner. In conclusion the advantages claimed are as follows:

1. Haemostasis complete.
2. Leaves no sac to be filled with secretions, etc.
3. Removes all diseased tissue.
4. Does not require more skill or time to perform.
5. Convalescence as smooth as after other operations.

A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

H. Winnett Orr, M. D., F. A. C. S. Lincoln Nebraska. Formerly Lt. Col., M. C., U. S. Army.

CHAPTER II.

In Liverpool, Sir Robert Jones gave us our first accurate ideas of the British scheme for the care of the war wounded.

Upon arriving in London, Major Goldthwait immediately set about to give us a real course of instruction in the treatment of war wounds and fractures, and methods in war hospitals.

First of all, we were formally and officially welcomed. Ambassador Page and Mrs. Page entertained the nurses and officers of the various American organizations that had just arrived. At this reception Lady Astor invited us to visit the Canadian Red Cross Hospital at her own place at Taplow. We went out next day.

At this beautiful estate of several thousand acres, about 30 miles from London there was a Red Cross Hospital of 1100 beds for Canadians. At Lady Astor's house overlooking the Thames, we had tea. Before tea there was a baseball game. King George later attended an exactly similar function at this hospital.

We returned to London on the evening train and were the guests of Major Goldthwait at a performance of "Romance," by Miss Doris Keane. With war impressions accumulating, this wonderful play seemed out of place. The gaity of "Chu Chin Chow," a few evenings later seemed even more so. However, Captain Metcalfe and I went to see "London Pride," and found that even the theaters were only partly succeeding in getting away from the awful tragedy of the war.

On the next day (June 1, 1917) we really began our war hospital training. We went in a body to Shepherd's Bush Military Orthopedic Hospital at Hammersmith. Here there were about 1200 beds for orthopedic cases. Much of the best reconstructive surgery in Great Britain was being done at this hospital. Such well known surgeons as Elmslie, Dunn, Aitken and Bristow were on duty. Dr. Menell was in charge of the physiotherapeutic work. It was through the kindness of these men that we were permitted during the ten days following, to see the administrative, surgical and training methods by which the British wounded were being rehabilitated after their physical injuries in France.

At this time, it was already more than two and one-half years since the beginning of the war. We were all astonished to find how many of the patients were past the period of youth. Also, we had our eyes opened to the very serious character of the war wounds. It was almost beyond belief to see how very extensive was the physical damage done. The infections were appalling. Large open wounds involving bones and joints were bathed in pus. In those who had survived, there were some fearful evidences of the destructive power of gas gangrene. The larger number of the amputes were at home or at Roehampton, (which will be described later) but we saw a few amputations done and a few patients recently amputated who gave us some impression as to what the loss of limb as well as the loss of life for America, was going to be.

It was curious then, for us to find that the number and kind of casualties were being predicted for both attacking and defensive engagements and that all the way from the Front to the Base Hospital, more or less definite provisions were made before each attack for the transportation and care of the various kinds of cases.

To illustrate how effective this service was, I may relate that I talked one Saturday night to a boy who was being taken off a hospital train in Cardiff. He told me that he had gone to France for the first time on Thursday. His company went to action about noon on Friday. He was hit in the leg late Friday afternoon, and he was back on a hospital train in Great Britain on Saturday morning. I, myself, saw him in bed in a Base Hospital the same evening. Moreover, he had on a good splint, a good dressing and had had antitetanic serum during the first few hours that he was hurt. How the British did this for their hundreds of thousands was what the Americans had come to learn.

Officers, nurses and patients at a V. A. D. (Volunteer Aid Department) Hospital in Great Britain This hospital operated during almost the entire period of the war as an auxiliary to one of the large section hospitals. There were beds for fifty patients. Commandant, secretary and nurses were volunteer, unpaid workers. Only the graduate nursing sister received compensation.

Major Goldthwait, and the members of our unit were particularly interested at Shepherd's Bush, in the following problems:

1. Methods of immobilization for compound infected bone and joint injuries.
2. The cleaning up of infected wounds involving bones and joints.
3. The correction of late deformities after war wounds of bones, joints and soft parts.
4. The repair of peripheral nerve injuries.
5. Postoperative splinting by the methods of Hugh Owen Thomas and Sir Robert Jones.
6. Rehabilitation of war cripples by vocational training.

The British had already formulated an elaborate program covering this whole matter. However, much of it was still only on paper. In fact, for reasons that will be explained later, a large part of the program never did work out, (either in Great Britain or in the U. S.)

However, all of the problems suggested above had been solved to a considerable extent at the time we arrived at Shepherd's Bush. With money largely collected by King Manuel, (formerly of Portugal) excellent curative work shops had been built and five or six hundred men were working daily.

The shops served three purposes:

1. They gave occupations to a number of men whose recovery was hastened by the mere performance of certain arm and leg movements.
2. Other men were learning new trades adapted to their changed physical conditions.
3. The shops produced a large amount of splints, carpenter work, mattresses, brooms, brushes, etc.

From this time on our time was mostly spent on duty. However, we saw London Tower, and on the morning of June 3, attended an imposing flag ceremony at St. Paul's. The Stars and Stripes were given a place of honor with the British flag at the head of the procession.

Sunday we spent, with thousands of other people on the Thames. The Thames on Sunday is a lively scene. We went as far as Hampton Court where Henry VIII spent so much of his time trying to solve one of the greatest of all problems.

Next day we went out in the same direction to Richmond to visit the Star and Garter Hospital on the site of the old hotel. Across the valley, as one climbed the steep hill, was Windsor Castle.

The Star and Garter was established and rapidly enlarged for the care of men hopelessly crippled because of spinal cord injuries. These men were tended with special care. Even they were encouraged to employ themselves as best they could. One poor chap was doing quite well making and selling flies to fishermen.

Roehampton, which we visited a few days later, presented quite another picture. There was an atmosphere of hope. With two thousand men minus arms and legs, almost every one was busy. Mr. Muirhead Little in charge, had done and is still doing excellent work. One may pause to remind the reader that it was Mr. Little's father who named Little's disease and who brought subcutaneous tenotomy from Stromeyer to England.

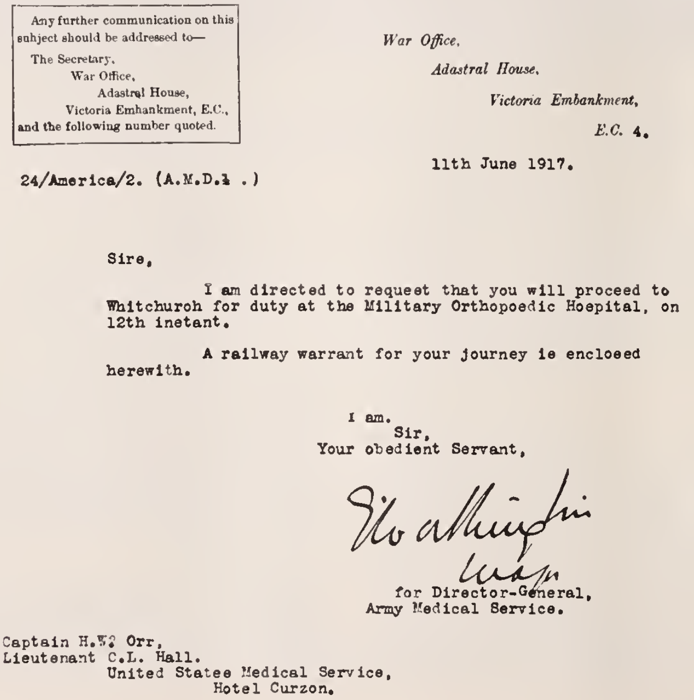
The British were facing an immense problem in the care of their men with amputations. Most of them were at home waiting for care. However, at Roehampton, stumps were being improved surgically, deformities were being corrected, temporary and artificial limbs were being put on, and best of all, the vocational schools were really working. From the motor repair training schools alone, about fifty limbless men a week were being graduated for work as expert motor mechanics or drivers.

So we were gathering our impressions and getting our first war training. We found that the British had achieved wonders in their preparation for and care of the wounded. Just when we were getting restless to lend a hand in the great work, assignments for the members of the Goldthwait unit began to come through.

One of the first contingents was sent to Liverpool. This consisted of Captain Cone, Captain Cole, Captain Billington, Captain Danfroth, Lt. Durham and Lt. McAusland. A day or two later Captain Francesco and Lt. Langworthy went to Aberdeen. Capt. Graves and Capt. Eikenbary went to Glasgow. Major Erving went alone to Oxford. This was an interesting and important post. Capt. Fayerweather and Lt. Spencer went to Leeds. Capt. Metcalf was sent to Belfast where he did fine work. Captains Kidder and Willard remained in London. Capt. Baldwin and Lt. Abbott were sent to Edinburgh, while Lt. Hall and I were ordered on June 12 to Cardiff.

On June 11, I received two important letters. My first from home, and the second, my orders to proceed for duty at Cardiff, which read as follows:

(To Be Continued:)



Any further communication on this subject should be addressed to—
The Secretary,
War Office,
Adastral House,
Victoria Embankment, E.C.,
and the following number quoted.

24/America/2. (A.M.D.1 .)

War Office,
Adastral House,
Victoria Embankment,
E.C. 4.

11th June 1917.

Sirs,

I am directed to request that you will proceed to Whitchurch for duty at the Military Orthopoedic Hospital, on 12th instant.

A railway warrant for your journey is enclosed herewith.

I am.
Sir,
Your obedient Servant,

for Director-General,
Army Medical Service.

Captain H.W. Orr,
Lieutenant C.L. Hall.
United States Medical Service,
Hotel Curzon.

ETIOLOGY, TREATMENT AND RESULTS IN 100 CASES OF BACKACHE.*

Arthur L. Smith, A. B., M. D., Lincoln, Neb.

Backache is one of the most common complaints of patients visiting an internist's office. Cases without history of accident or trauma are the ones I wish to call to your attention, so I have analyzed the first 100 cases revealed by a perusal of my history cards.

This condition is attributed to the kidneys by the patent kidney medicine man, to flat feet by the maker of orthopedic shoes, to the prostate by the urologist, to pelvic troubles by the gynecologist, to infected teeth by the dentist and so on, ad libitum, each specialist believing the slight derangement in the particular part of the body in which he is interested to be the etiolgical factor.

Medical progress depends to a great extent upon original research work but it is usually in the remote future before it can be applied to the patient. Accordingly, the grouping of facts which we already have at hand is of more immediate value to the welfare of the patient. Then on completion of repeated sortings and fittings together of numberless isolated facts into natural groups, according to well known physiologic and anatomic principles, through impartial studies, presumably more correct complete diagnoses and more efficient rational treatments would occur more generally.

None of these diagnoses have been made by me alone. No diagnosis has been made without a complete examination, which takes into consideration every part of the body. At least two other physicians and as many as six have examined each patient. Every specialty which seemed to be of benefit to the patient was taken advantage of.

In following cases backache was the chief complaint of the patient. This table gives only the essential laboratory findings and the most important part of the treatment.

It will be seen by a perusal of the table that 66 of these cases are due to pelvic and genito-urinary pathology and that only 11 are abnormal back conditions.

The history of a few cases follows:

1. A physician, 40 years of age, backache in lower lumbar region six years. The pain was of the "gripping" type and he could not walk in the upright position for several days at a time. The pain at this time was intense and the muscular spasm held him in the position of lateral scoliosis. Between attacks pain and tenderness were always present. The X-ray examination of the back was negative except it showed a broken sewing needle in the right ilio-psoas muscle region. The roentgenologist said the sacro-iliac joint was absolutely normal. The tonsils were removed, then most of his teeth were extracted, a slight urethral stricture was dilated and his prostate was massaged. The only relief he received came from osteopathic manipulations and these lasted about an hour. The pain, tenderness and muscular spasms gradually increased in intensity and it was decided to attempt the formidable operation of finding and removing the needle somewhere in his back. At this time during an attack, in desperation, his back was strapped for a possible sacro-iliac strain. The pain disappeared at once, the muscular spasm was relieved immediately and he could move freely in all directions. In a few days a strong sacro-iliac belt was substituted and although he cannot lift heavy objects, he has been entirely free from the former symptoms for two years.

2. A girl, 14 years old, complained of severe backache for a year. After several physicians had failed to relieve her a chiropractor treated her until he was ashamed to ask her to return. Her parents were very much worried about her condition and feared a very grave condition might be present since her trouble had "baffled several physicians." After a complete examination nothing abnormal could be found. Massage and hot applications in the lumbar region were tried for two weeks but no progress was made. After going into her home life completely it was found that she did not like to wash dishes nor do housework and she finally admitted that her backache was a pretense, so that she might be relieved from this drudgery. She decided she would rather do the house work than have her parents acquainted with the true condition. Her recovery was complete.

3. A married lady, 24 years of age, came to me with frequent urination and intense backache of about 10 days duration. An examination showed an incarcerated pregnant uterus with the cervix protruding from the vagina. She was placed in the knee chest position and with great difficulty the uterus was pressed out of the pelvis into the abdominal cavity. A pessary was inserted to hold it in place. Severe contractions followed the next day and some bleeding from the uterus took place, but a miscarriage was avoided. She is now in her seventh month of pregnancy and has had no backache since the threatened abortion.

CONCLUSIONS.

In 100 cases in which backache was the prominent symptom only 11 showed pathology in the back region. In the other 89 the pain was referred to the back from abnormal conditions in other body areas.

This shows the necessity for a complete

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*Read before The Elkhorn Valley Medical Society, Fremont, Nebraska, January 13, 1921.

examination and then removal of the etiological factor and that local therapy should not be attempted until the entire body has been examined and a proper diagnosis made.

Diagnosis	No. of cases	X-ray	Laboratory	Treatment	Condition of back at present
Sacro-iliac strain	8	4 negative	Negative	Manipulations, strap and belt	6 normal 2 improved
Flat feet	2		Negative	Steel arches	Normal
Tabes	1		Spinal Fluid and Blood Wassermann test 4 plus	Mercury, Salvarsan and K. I.	Back normal, leg pains
Malingerer	1	Negative	Negative	Psychotherapeutic	Normal
Injury to soft tissues of back	1	Negative		None	Lost sight of after damage suit
Cystocele and rectocele	2		Negative	1 operated upon 1 none	1 returned after child birth 1 same
Pyelitis	13	4 negative	Pus cells and organisms in pelvic urine.	Pelvic lavage, Silver nitrate, 1%	All normal
Pyelonephritis	2	2 negative	Pus cells, organisms, pus cells casts, albumin in pelvic urine	Pelvic lavage, alkalis, bed	No backache 1 chronic nephritis
Perinephritic abscess	1		White blood cells increased	Operated upon	Normal
Pendulous abdominal wall	1		Negative	Belt	Normal with belt
Acute hemorrhagic nephritis	4		Red blood cells, and red cell casts in pelvic urine	Bed, alkalis	Normal
Spinal cord tumor and meningitis	1	Negative	Meningococci and pus cells in spinal fluid	Serum	Backache normal. Paraplegia
Nephrolithiasis	2	1 negative 1 positive	Red blood cells in urine	1 operated upon 1 passed into bladder	Normal
Cholelithiasis	2	2 negative	Negative	2 operated upon	Normal
Hemorrhoids	8			1 operated upon 7 injected	Normal
Neurasthenia	7		Negative	Psychotherpeutics and medical	5 normal 2 improved
Hypertrophied prosstate	2		Pus and organisms in retained urine	1 operated upon 1 massage	1 died 1 normal
Ectopic pregnancy	2		Negative	Operated upon	Normal
Tubal and ovarian disease	11		Negative	6 operated upon 5 local treatment	9 normal 2 improved
Uterine fibroids	2		Negative	Hysterectomy	Normal
Non-patent vaginal canal	1			Dilated	Normal
Incarcerated pregnant uterus	4		Negative	2 replaced uterus 2 miscarriages	Normal
Prolapsed uterus	1		Negative	Operated upon	Normal
Malposition of uterus	6			2 operated upon 4 pessaries	Normal
Cystitis	11		Pus and blood in urine	Bladder irrigations	10 normal 1 same
Carcinoma of ileum and pyelitis	1	Negative	Pus and organisms in pelvic urine Section of tissue—cancer	Pelvic lavage	Died
Hypernephroma	1	Negative	Negative	Operated upon	Died
Sarcoma of ilium	1	Negative	Section tissue Osteosarcoma	Operated upon	Died

FOCAL INFECTION AND ITS RELATIONSHIP TO SYSTEMIC DISEASE.*

A. F. Tyler, B. Sc., M. D., F. A. C. P., Omaha, Neb.

Although there had been a feeling among the members of the medical profession for many years, that certain local infections had some sort of a relationship to certain systemic diseases, it remained for Frank Billings and his collaborators, especially Rosenow, to bring definite proof of such a relationship. About 1900, the work of these men was begun and carried on through a period of years before definite announcement was made. So conclusive is the proof brought forward by Billings, that we deem it unequivocal.

Granted then, that we have the proof of the relationship of focal infection to systemic disease, it remains only for us to apply definite principles in handling this type of patient. In order that we may have more clearly in our minds some of the fundamental principles laid down by Billings, it seems advisable for us to briefly consider some of these data.

It has been proven that ninety per cent of all primary foci of disease caused by focal infection are located above the clavicle, only ten per cent originating below that point. Included in the foci above the clavicle are, the teeth, the tonsils, the sinuses, the air passages and the naso-pharanyx. The teeth rank first in importance, the order being that in which I have given them above. Of course the tonsils can be seen with the eye, and by careful scrutiny one can usually tell whether they are infected, and if one so desires he can rather easily secure bacteria from the crypts of the tonsils for microscopical examination. The problem with the teeth and sinuses is more difficult and it appears as we go farther in our investigation of focal infection and its relationship to systemic disease, that the only way we can be quite sure of ourselves is to adopt a certain definite form of routine examination in all patients. This routine, in my opinion, should cover every part of the patient's body. But in relationship to this subject, special stress should be laid upon close inspection of the teeth with compression of the gums, to determine pus pockets, X-ray examination of all of the teeth and sinuses and physical examination of the tonsils and the sinuses. If one adopts this routine procedure, he will be surprised at the number of patients who have large amounts of infected bone about the roots of the teeth or who have definite pus pockets along the sides of the teeth or who even have chronically infected sinuses, the maxillary sinus being the chief offender. So frequently is the maxillary sinus infected, without causing sufficient pain to bring the patient to the physician, that for a number of years it has been my routine, when a patient is referred for X-ray examination of the teeth, to make X-ray examination of the maxillary sinuses. It has been wonderfully interesting and surprising to me to find how many cases we pick up by this routine examination which have been entirely overlooked previously. We find not only chronic inflammation of the sinuses but find in many cases the presence of polypi. So definite are the X-ray findings in this type of case that we have not yet had one opened and inspected without finding definite pathology.

The bacteria found in the foci of infection which are responsible for systemic disease, belong of course, to the streptococcus group; Rosenow having proven that the streptococci, by certain environmental surroundings, can be changed from a viridans to a rheumaticus, or a hemolyticus, or a mucosus, or even a pneumococcus. So that all of these belong to the same group and are closely related, different ones causing different systemic diseases. There are certain bacteria of the streptococcus group which are prone to cause acute systemic diseases and others, chronic systemic diseases. Of the acute type, we may mention—acute rheumatic fever, rheumatic endocarditis, myocarditis, and pericarditis, chorea, malignant endocarditis, nephritis, appendicitis, cholecystitis, acute gastric and duodenal ulcer, acute pancreatitis, erythema nodosum, herpes, spinal myelitis, acute osteomyelitis, thyroiditis, iridocyclitis, and from the genital tract, acute systemic gonococcus infection.

Of the chronic diseases related to focal infection, we have chronic infectious arthritis, chronic infectious, nephritis, chronic cholecystitis, chronic peptic ulcer and chronic infectious endocarditis.

Billings has proven beyond the shadow of a doubt that appendicitis is usually caused by a strain of the streptococcus group from the mouth or throat foci, especially the dento-alveolar abscess. Likewise, cholecystitis is usually from foci of the head. On the other hand, cholecystitis may become a focus for systemic infection.

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*Read before the Republican Valley Medical Society, Holdrege, Neb., Oct. 28, 1920.

(The discussion of Dr. Tyler's paper appeared under Focal Infections in the Mouth in the May number.)

It appears that we do not always give sufficient consideration in our treatment to the fact that we may have secondary foci in the body which in turn are acting again as primary foci for other parts of the body. It is due to this oversight on our part that a certain percentage of failures is recorded in the removal of the primary foci. Of course there are other causes for failure, such as the impossibility of removing all of the primary focus, that the secondary foci are out of the reach of direct attack, or that improper technique may have been used in removing the foci which are accessible. Where it is impossible to remove all of the primary focus or the secondary foci, we must depend upon the patient's immunity to overcome the resistance to that infection which must be left in the body.

The mode of dissemination of septic material from a primary focus to distant parts of the body is fourfold: first, the hematogenous; second, through the lymphatics; third, systemic intoxication, as illustrated by diphtheria and tetanus where soluble toxins excreted by the specific organisms of a focal area overwhelm the entire system; fourth, production of anaphylaxis by the action of the bacterial protein of the pathogenic microorganism upon the body cells sensitizing them to certain bacteria.

Treatment of systemic diseases which are caused by foci of infection resolves itself into the following mode of attack. First, the removal of the primary focus of infection. By removal, I mean getting rid of all of the infected material found in the primary focus. I believe that after a patient has carried the foci of infection with him long enough to have developed systemic disease, he has built up as much of an immunity as is possible for him and has reached the point where the infection has overbalanced the immunity so that we, in turn, should remove all of the infected material where it is at all possible. This means that we need to change our method of attack somewhat from what we have been accustomed to using in the past—in the mouth, for example, by changing the technique so that one can actually see that the infected material is removed. All of the infection in the mouth can be removed at one sitting without any febrile reaction in the body of the patient. This, it seems to me, is proof enough of the correctness of this policy. Second, we should remove the secondary foci where possible. That is, if there is a focus of infection in the tonsils, it is not sufficient in many cases, to remove the tonsils alone, but we should also remove the infected glands in the neck. Do not misunderstand me as advocating this surgery all at the same sitting, but we should follow this routine as rapidly as is consistent with the welfare of the patient. Third, we must build up the patient's resistance to infection by systemic treatment. Included in this regime would be the usual hygienic measures adopted for building up the patient, such as plenty of fresh air, sunshine and sufficient exercise and serum and vaccine therapy where indicated.

The following case reports showing concrete illustrations of the connection of foci of infection with certain diseases and their relief by removal of the foci, are cited, hoping that they will prove of interest.

Case No. 12707, Mrs. W. N. P. Age 43.

Diagnosis: Infected right maxillary and frontal sinuses. Gallstones with slight adhesions to the duodenum.

Chief Complaint: Neuralgia in right side of face.

Clinical History: For nearly two years this patient has had neuralgia. Some bad teeth were removed and the neuralgia improved for a year and she was free from pain for six months. One month ago the pain recurred. She has had gall bladder trouble for fifteen years, forty stones being removed ten years ago. She has had several attacks of colic since, but there are no gastric symptoms now excepting distention with gas. The sinuses were reported clear.

Physical Findings: The heart, vessels and thorax are negative. She is very tender in the right upper quadrant and slightly tender in the lower quadrant.

X-ray Findings: The gall bladder shows shadows suggestive of stones. The stomach is normal in shape, size and position; empty in 5 hrs. The duodenum is normal except for a small irregularity on the left side of the first portion, which has the appearance of probable adhesions. The cecum and colon are normal and freely movable. The colon is spastic in the left half. Sinuses—the sphenoids, ethmoids and left maxillary are clear. The right maxillary and both frontals are cloudy (low grade chronic inflammation with thickening of the membrane).

Operative Findings: The right frontal and right antrum drained.

Case No. 13403, Mr. O. T. P. Age 38.

Diagnosis: Cholecystitis; extensive oral infection.

Chief Complaint: Pain in the pit of stomach.

Clinical History: For five years the patient has had epigastric pain which does not radiate, the pain is constant and made worse by food. He has distention with gas, and nausea but no vomiting. He has periods of remission for several weeks at a time. There has been no jaundice.

Physical Findings: Many crowned teeth. The abdomen is very tender in the epigastrium and to the left.

X-ray Findings: The stomach is normal in contour, size and position; one-fourth full at 5 hrs. The duodenum shows spasm. The appendix is visualized, not tender and freely movable. The cecum and colon are normal in contour and freely movable. The gall bladder is enlarged, tender with probable stones.

Teeth: There are eight abscessed teeth, three of which are roots.

Operative Findings: Cholecystitis—drainage. Removal of oral pathology.

Results: Patient is well.

Case No. 12801, Mr. L. J. R. Age 62.

Diagnosis: Productive spondylitis; periapical abscesses; pyorrhea.

Chief Complaint: Pain in the sacro-iliac region.

Clinical History: A few months ago the patient had the "flu" and since then has had a great deal of pain in the sacro-iliac region which keeps him awake often all night. Bending causes much pain. No position gives comfort but sitting propped up in bed is most comfortable. There is also a dull pain in the dorsal region.

Physical Findings: Active pyorrhea and decayed teeth. The thorax is negative. Tender on deep pressure in midline of the abdomen. There is tenderness over the dorsal, lumbar and sacro-iliac regions spasm of the lumbar muscles; and an indirect left inguinal hernia.

X-ray Findings: The sacro-iliac joints show no evidence of misplacement or disease. There is definite lipping of the upper margin of the left side of the fifth lumbar vertebra. and lipping of the anterior margin of the ninth and tenth dorsal, also the sixth, seventh and eleventh dorsal.

Teeth: Active pyorrhea and two abscessed teeth.

Operative Findings: External alveolectomy done above and below. All pathology removed, consisting of two granulomas and soft bone from extensive pyorrhea of all teeth.

Results: Recovery complete.

Case No. 13689, Mr. A. G. S. Age 41.

Diagnosis: Tuberculous cervical glands on the right side. Infection of the left maxillary sinus. Left facial neuralgia.

Chief Complaint: Referred for treatment of tuberculous glands of right side of neck.

Clinical History: Enlarged cervical glands appeared first in 1907. He has had eleven operations on them since and also in the right axilla.

Physical Findings: The thorax is negative. Enlarged cervical glands.

X-ray Findings : The left maxillary sinus is opaque. The right maxillary sinus is cloudy. The frontals are clear.

Operative Findings: The left maxillary sinus was filled with pus due to perforation of an abscess at the apex of the upper left first molar.

Results: Well—glands have disappeared following X-ray therapy.

Case No. 12706, Mrs. E. J. Age 27.

Diagnosis: Enlarged thyroid (simple). Extensive oral pathology.

Chief Complaint: Goitre and nervousness.

Clinical History: Patient has had goitre for several years which came on following the birth of her boy six years ago. It has gradually been getting worse and she became very nervous until three years ago when she commenced a course of X-ray treatment. About nine months ago she began to get nervous again and palpitation became more marked. The goitre has remained about the same size but the eyes have never become prominent.

Physical Findings: Many filled and crowned teeth with evidence of old dento-alveolar abscesses which have ruptured through the gum. Active pyorrhea. Tonsils buried, apparently clean. The heart is negative, except for an occasional missed beat. A cardio-respiratory murmur is heard at the apex which disappears on lying down.

X-ray Findings: Active pyorrhea of all teeth and ten periapical abscesses.

Operative Findings: External alveolectomy and removal of numerous chronic osteomyelitic areas.

Results: Entirely well, being free from all symptoms.

Case No. 13369, Mr. W. H. H. Age 33.

Diagnosis: Cholecystitis; oral infection.

Chief Complaint: Gastric distress.

Clinical History: Patient has had gastric distress characterized by fullness and gas, immediately after meals, which is relieved by taking soda. He has been free from this trouble since limiting his diet to broiled steak, toast and coffee. There is pain if the gas is not relieved by alkalies but it does not radiate. He has had nausea and vomiting a few times but no jaundice.

Physical Findings: Active pyorrhea. Thorax negative. Muscle spasm in the right upper quadrant of the abdomen.

X-ray Findings: The stomach is normal in contour, size and position, empty in five hours. There is pressure on the right side (pylorospasm). The duodenum is all right. The gall bladder is enlarged and tender and there are no stones demonstrable.

Teeth: Extensive recession of the alveolar margin with active pyorrhea of all teeth. Four large periapical abscesses.

Operative Findings: Stone the size of a walnut in the gall bladder, chronic cholecystitis; gall bladder removed. Patient died the third day.

Case No. 13247, Mrs. W. H. M. Age 36.

Diagnosis: Prepyloric ulcer of the stomach on the greater curvature; periapical pathology.

Chief Complaint: Vomiting blood.

Clinical History: Patient had a gastroenterostomy four years ago for ulcer of the stomach and began vomiting one week after operation. She had a severe vomiting spell February 1918, which lasted one week. She was free from pain and vomiting then until August 1919. There has been a recurrence of pain and vomiting in the last two weeks and since then she has been in pain and has vomited nearly every day. She is relieved by food and soda and eats at 2:00 A. M. In September 1918, and in October 1919, she vomited a half cup full of blood which was dark at first and then bright red. Since then the vomitus has been streaked with blood. The pain is constant, dull in character, and passes through from the epigastrium to the back.

Physical Findings: Many crowned teeth. Tonsils appear O. K. There is a scar in the epigastrium, midline. Tenderness in the right upper margin to slight and deep pressure. The liver and kidneys are O. K. The thorax is negative.

X-ray Findings: The stomach shows a gastroenterostomy stoma which functions freely, the stomach being empty in three and a half hours. A small amount of food goes through the pylorus. Just proximal to the pylorus, on the greater curve, is a definite ulcer with induration extending along the greater curve one and a half inches. The cecum and colon are low but freely movable. Reexamination confirms the above findings. Examination three months later shows that the filling defect on the greater curvature near the pylorus, has disappeared and peristaltic waves pass through that region. Both stoma and pylorus are functioning.

Teeth: Four periapical abscesses and impacted upper left and upper right third molars.

Operative Findings: External alveolectomy and medical treatment.

Results: Patient was much improved when she left the hospital.

DISCUSSION.

A. F. Tyler,—Closing—In answering the questions raised by Dr. Sanderson about whether all diseased teeth will show an image on the X-ray film, let me say that not all diseased teeth will cast such an image. However, by combining X-ray examination with the other physical findings, especially testing the teeth for vitality by the electric test, it will enable us to locate all nonvital teeth and in such teeth, any shadow around the apex showing destruction of bone, is indicative of definite pathology. We must bear in mind that X-ray films only show a change in density and that the infection in a diseased tooth begins in the pulp canal and follows the path of least resistance out through the apex, causing disease of the bone surrounding the apex with subsequent absorption of the lime salts and in this manner causing a rarified shadow on the X-ray film. This process requires a period of not less than six weeks, so that as a rule an acute infection of the pulp canal will not show before the six week period.

As mentioned in the body of my paper, the diseased area in the jaw bone is always greater than that actually shown in the X-ray film.

MEDICAL DRAINAGE OF THE GALLBLADDER.

A. Sachs, M. D., Omaha, Neb. Professor of Internal Medicine at Creighton Medical College.

A great deal of interest has been aroused since Lyons published his article on medical biliary drainage, which is based on Meltzer's law of contrary innervation.

It is undoubtedly a great advance and allows us to make a direct examination of the bile. Lyons separates three types of bile, which he terms "A," "B" and "C" biles. "A" bile is from the common duct, "B" bile from the gallbladder, and "C" bile from the liver. For more details of this procedure, I refer you to Lyons' articles. (2).

I have been interested in this work for the past seven months, and have had ninety cases with over 180 biliary taps. From the results obtained on these cases, I believe that it is of great diagnostic and therapeutic value.

There is some dispute as to whether "B" bile is from the gallbladder, and also if the gallbladder really empties. For that reason, I wish briefly to report two cases which may aid in clearing-up the above facts.

Lyons gives five reasons for believing that "B" bile is from the gallbladder, and summarizing them, they are as follows:

1. He believes Meltzer's law of contrary innervation is true.

2. The color and viscosity of "B" bile indicates that it has a higher concentration than other bile, and hence strongly suggests that it comes from a storage chamber, (gallbladder).

3. The amount of "B" bile obtained shows that it must come from a storage chamber, for the ducts could not possibly hold this amount.

4. Lyons states that he has never seen "B" bile from any patient that has had a gallbladder removal (ten cases reported). In the cholecystectomized patients, bile enters the duodenum continuously, showing a lessened tonus of the sphincter muscle.

5. Pathological bile clears up under repeated medical drainages. In other articles Lyons claims to have obtained the same cultures from "B" bile that he obtained from bile taken at operation.

The above proofs are undoubtedly of great value, but still not entirely conclusive, and for that reason I wish to report the following:

Case 1. Mrs. A. H. Referred by Dr. G. Simanek. Medical drainage three days prior to operation showed "A" bile, a light, golden yellow; "B" bile a dark, static bile; "C" bile a light lemon yellow. Through the kindness of Dr. Simanek, I was permitted to pass a duodenal tube in the above patient before she was anaesthetized. She was then brought to the operating room, anaesthetized, and the usual gallbladder incision made. The gallbladder was exposed, and found to be fairly well distended. Before any exploration was made, 50 cc. of a 33⅓ per cent solution of magnesium sulphate was introduced directly into the duodenum, through the duodenal tube. The suction bottles were applied in the usual manner, and in three minutes bile started to flow. In five minutes we started to get a dark, golden bile, (typical "B" bile), and our distended gallbladder gradually collapsed. The gallbladder was then removed in the usual manner, and the "B" bile in our collection bottle was exactly the same as that obtained from the removed gallbladder.

Case 2. Mrs. F. Referred by Dr. Simanek for medical drainage and treatment. On three successive medical drainages, only two types of bile were obtained, "A" and "C" bile. The case was referred back for operation as one not suitable for medical drainage. A diagnosis of stones, with probable obstruction of the cystic duct, was made.

The duodenal tube was introduced before operation, as in the above case. After the usual gallbladder incision was made, and the gallbladder exposed, a small, contracted gallbladder was seen. Fifty cubic centimeters of a 33⅓ per cent solution of magnesium sulphate was introduced into the duodenum through the duodenal tube. No static appeared in five minutes time and the size of the gallbladder remained the same. The gallbladder was palpated and found to contain stones. It was removed in the usual manner, and on opening it, a stone occluding the cystic duct was found. These specimens were demonstrated at the time I presented this subject at the Omaha-Douglas County Medical Society, Feb. 12th, 1921.

Personally, I believe that "B" bile is from the gallbladder. However, I do not wish it to be inferred that I offer these observations as conclusive proof as yet, but I hope that they will stimulate others to try the same procedure. One or two cases prove very little, but by this method we shall soon know by direct proof whether the gallbladder empties on stimulation, and if "B" bile is really from the gallbladder.

In the near future, I hope to report our full series, and results on this work, more in detail, however, I am making this report to lead other men to report their findings by the above procedure, which is entirely safe, harmless and beneficial to the patient. Since using this method, we have found that our cases have made an unusually rapid convalescence, and we are now using medical drainage in all cases as a pre—and postoperative procedure.

References:

1. Meltzer, S. J. Am. J. M. Sc. 153; 496 April 1917.

2. Lyon, B. B. Vincent, J. A. M. A. Sept. 27, 1919. Vol. LXXIII.

Lyon B. B. Vincent N. Y. M. J. July 3, 1920. Vol CXII No. 1.

Lyon B. B. Vincent N. Y. M. J. July 10, 1920 Vol CXII No. 2.

Lyon B. B. Vincent Am. J. M. Sc. October 1920 Vol CLX No. 4.

KILL THE FLY.

Kill at once every fly you can find and burn its body.

The killing of just one fly NOW means there will be billions and trillions less next summer.

When we know that the mother fly lays 150 eggs at one time, and deposits six batches in her lifetime of five weeks, the appalling possibilities for spreading disease germs are evident.

Every fly-speck abounds in germs. In the track of a single fly have been found one hundred and sixteen colonies of germs, and on and in the body of a single fly 6,600,000 germs.

The serious strain, both mental and physical, that the human system has undergone during the war has impaired the vitality and strength of the inhabitants of our country and made them more susceptible to the ravages of disease.

The continued presence of flies in the home is a positive index that the housewife is careless and uncleanly in the management of the household, and that a hidden abode is maintained for the fly family.

Under no circumstances patronize a restaurant, grocery store, or butcher shop if flies are permitted to walk about on the food. Observation by the patrons will show the travels of the fly from filth to food, scattering the disease germs it has gathered. Watch the fly when you await the service of your meal. It will be an interesting and instructive experience.

He plants his disease germs on your bread. He buries them in your butter; trails them over the sugar; sips your coffee and swims in the milk.

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A NEW EDITOR AND A LITTLE HISTORY.

Purely as a labor of love and duty, the undersigned, who may justly claim a paternal interest in the Nebraska State Medical Journal, assumes editorial charge by the direction of the publication board.

In his presidential address before the annual meeting of the association in 1907, he recommended that steps be taken looking toward the establishment of a state association-owned journal.

In 1913, he was made chairman of a committee appointed to investigate the contract with an existing medical journal then publishing the proceedings of the association, and after the report was given at the 1914 meeting he was made chairman of a committee appointed for two years and instructed to take steps to create a Nebraska State Medical Journal at the 1916 meeting. The House of Delegates having voted at the 1916 meeting to adopt the recommendations of this committee to establish a state association journal and provided in the by-laws for a Committee on Journal and Publication he became chairman of this committee and has continued in this position to the present time, and as such official, assumed the duties pertaining to the editorship upon the death last November of the former editor.

While, therefore thoroughly interested in the success of the Journal he feels his limitations, and asks the cooperation and constructive criticism of the profession.

F. A. Long.

THE POLICY OF THE JOURNAL.

Some time ago one of the leading men of the profession in this state offered the criticism that the Nebraska State Medical Journal had no definite policy.

It seems fitting therefore that a new directing head on assuming charge should set forth what he conceives to be the policy of the Journal. The Journal is the property and official organ of the Nebraska State Medical Association and therefore reflects the policies of the association, and in general the policies of the American Medical Association.

The Journal aims primarily to publish the best scientific articles emanating from the members of the State Association (and from others by invitation), but inasmuch as medicine is not yet an exact science and art, articles of seeming merit, although empirical, may find publication in its pages. No favoritism is shown toward any member, and the general practitioner and the country doctor, stand on the same plane as the specialist in the largest city. The activities of the medical colleges of the state, of the hospitals, of the Bureau of Health and of welfare work related to medicine are matters of interest to the Journal.

The editorial department is an open forum; the editor the directing head, the members of the profession the editorial writers, who shall from time to time, as requisitioned, contribute short articles relating to phases of scientific and professional work, on matters related to medicine, or on topics of general professional interest.

THE LINCOLN MEETING.

The fifty-third annual meeting of the Nebraska State Medical Association held at Lincoln May 9-12 will be long remembered as one of the most delightful and harmonious medical conventions ever held. Out of the paid-up membership of 1,150, 375 physicians signed the attendance register, which is said to be the high record.

The scientific program was an unusually

good one and brought out animated discussions.

The work of the Councilors had been so well done before the meeting that the House of Delegates found little to do except approve the recommendations of the Council. No proposed amendments to the Constitution and By-Laws were offered during the sessions.

The local committee of arrangements had provided several surprisingly nice entertainments for the visiting ladies and the annual banquet with the accompanying musical features, attended by over two hundred physicians and their ladies, was of the highest order.

The meeting was peculiarly free from unseemly political scrambles such as have occurred on some former occasions. A ridiculous situation developed in the election of officers and produced considerable levity.

The officers elected are as follows:

President, B. B. Davis, Omaha.

Vice Presidents, Porter F. Dodson, Wilbur, and P. R. Howard, North Bend.

Secretary-Treasurer (for unexpired term), E. T. Manning, Omaha.

Secretary-Treasurer (for full term beginning Jan. 1, 1922), R. B. Adams, Lincoln.

Corresponding Secretary, W. P. Wherry, Omaha.

Councilors (all reelected), 1st., Dist., A. P. Overgaard, Omaha, 2nd., Dist., H. J. Lehnhoff, Lincoln, 3rd., Dist., R. W. Fouts, Falls City, 4th., Dist., A. E. Cook, Randolph.

Delegate A. M. A., A. D. Dunn, Omaha.

Alternate, Wm. R. Neumarker, Columbus.

Delegate, Council on Medical Education, etc., LeRoy Crummer, Omaha.

Member, Committee on Journal and Publication, F. A. Long, Madison.

NEBRASKA HOSPITAL STATISTICS.

The annual report of the Council on Medical Education and Hospitals of the American Medical Association as published in the Hospital Number of the Journal of the A. M. A. makes an interesting study.

State institutions devoted largely to custodial care and hospitals of the Army, Navy and Public Health Service are not included in the published list. The list as given for the United States accounts for 4,013 hospitals with a bed capacity of 311,159, and an average of 67% of these beds used daily.

Nebraska has 69 hospitals, 44 having more than 25 beds, and 25 with less than 25 beds. The total bed capacity is given as 3,507, and the average number of beds occupied daily 2,298, or 66%.

Omaha has 17 hospitals with a total bed capacity of 1,759. Lincoln, five hospitals with a capacity of 406, both exclusive of hospitals the bed capacity of which is below 25. But two places besides Omaha and Lincoln have hospitals of above 100 capacity, to-wit, Columbus and Grand Island. Four Omaha and one Lincoln Hospital are approved for the training of interns. Fifty-eight counties are without hospitals of any kind.

MADAME CURIE AND RADIUM.

Madame Marie Curie, of Paris, who discovered radium in 1898, is now in this country on a visit, the guest of leading American women, who will present to her one gram of radium worth $120,000.

Madame Curie has never profited by her discovery and is supporting herself on the small income of a scientific instructor at the Sorbonne University. Nothing could be more fitting than this tribute to the greatest feminine scientific genius of the ages, and fulfills the wish Madame Curie had expressed that she might have a gram of radium for experimental purposes, for she did not own any of the precious radium she had given to the world. More than 90% of the world's supply of radium is produced in the United States from carnotite ore mined mostly in the wilds of Colorado and Utah many miles from railroads, shipped to Pittsburg, Pa., in hundreds of tons from which by a very complicated process the finished radium is obtained in minute quantities.

One hundred and forty grams or five ounces, represents the world's total supply of radium.

MAJOR GENERAL LEONARD WOOD A COLLEGE PRESIDENT.

Major General Leonard Wood has been elected Head of the University of Pennsylvania, and it is understood that on his return from the mission to the Philippines he will resign from the army and take up the direction of the educational work of this great university. No more interesting character has developed in American medical history than Leonard Wood. Born in 1860, he graduated from Harvard medical school in 1884, soon thereafter entered the army as a surgeon, participated in the Apache and other Indian campaigns, became a line officer during the Spanish war and was with Roosevelt and the Rough Riders in Cuba, rose to the rank of Major General, became Chief of Staff, was one of the prominent candidates for President during the late campaign, and has now been sent by President Harding to investigate the fitness of the Philippinos for independence.

NOT AN ABUNDANT HARVEST.

The net result of the work of the fortieth session of the Nebraska Legislature, of especial interest to the medical profession is about as follows:

Provision is made for a clinical psychologist who shall study the problems relating to delinquent, dependent and neglected children.

Christian Science is relieved from all legal restrictions relating to the practice of medicine, except that its votaries are not allowed to give medicines or perform surgical operaations and they are amenable to quarantine laws.

A State Reformatory for certain first offending criminals with a capacity for 200 is to be established at some place to be determined, and $300,000 is appropriated for buildings.

Compulsory institutional care at the State Industrial Home for Women at Milford, for prospective mothers unable to properly care for themselves, or where no relatives or friends have provided proper care is provided for, through a simple legal process before probate or district court.

Pregnant women and minors under 16 years of age are not to be admitted or allowed in county poor houses.

The advertising of so-called cures for venereal diseases is prohibited.

New and more stringent laws on pandering and incest were enacted. Minor changes were made in the laws relating to the registration of births and deaths.

$150,000 was appropriated for a new hospital building at the institution for the Tuberculous, at Kearney.

The workman's compensation law was amended to make the maximum fee allowed in any case read "reasonable" instead of "$200" as in the old law.

HUGO WIGHTMAN.

In the death of Dr. Hugo Wightman, the medical profession lost one of its most interesting members.

Hugo William Wightman was born in Saginaw, Michigan, September 16th, 1873. When he was five years of age his father was drowned and he was sent to relatives in Germany. He returned to America at the age of thirteen and was placed in a Lutheran school at Northfield, Minnesota. At the age of sixteen, he completed the course in electrical engineering at the University of Minnesota, after which he took a position in a drug store in Chicago. After seven months service in the drug store, he passed the State Board examinations of Illinois for Assistant Pharmacist and a few months later for Registered Pharmacist with full qualifications. This he did without attending any school. He took up the study of chemistry by himself and fitted up a laboratory for this purpose. During his student years, as throughout his life, Dr. Wightman was an insatiable worker, and his activities most varied. He studied and taught bacteriology and chemistry. He worked as a private pupil of Klebs for two years. He spent a year and a half doing special work in bacteriology and chemistry in the University of Heidelberg. During his medical studies at Bennett Medical School in Chicago, he earned his living by teaching bacteriology and histology. He taught at different times practically all of the courses in the first two years in several of the different medical colleges of Chicago. In the year 1902-3 he served an internship on the eclectic service at Cook County Hospital. He furthermore passed the civil service examination for attending Surgeon at Cook County but left Chicago before being certified. We find him at one time doing experimental work for an entire year for Dr. John B. Murphy of Chicago. After wandering about and attempting to practice in several different localities he came to Omaha in 1910 to teach Anatomy in Creighton Medical College where he distinguished himself as a teacher of great force, accuracy and wide knowledge.

Dr. Wightman was first and always an experimentalist. The urge in him for new knowledge controlled his life. He wanted to try everything. There was nothing that he would not attempt as a surgeon. His methods of attacking surgical problems were often original and he pursued a new idea with dogged persistence. "Tis dogged that does it" applied to him with special force.

Dr. Wightman did many things for which he received no credit. It is said that while in Chicago he invented smokeless gun powder, the formula for which he sold to the Du Pont Manufacturing Company, for the paltry sum of three thousand dollars. While experimenting with the gun powder he blew up the drug store in which he was employed and lost his job. The story is also told of him that following the Iroquois Theatre fire in Chicago, he formulated a fire proofing solution for painting curtains which would not damage colors. He sold the formula to a theatrical manager for one hundred dollars.

Dr. Wightman's was not a many track mind. He focused intently on whatever subject he was interested in and his interests were few. Of the world outside of medicine and its integral sciences he seemed to know little. His love was medicine and his religion was work for his love. He was, however, an expert mechanic, and owned one of the first automobiles on the streets of Chicago, a one-cylinder car in which he used to wheeze along the boulevards, a spectacle for all the passers by.

Dr. Wightman was one of those exceptional men who are touched with genius. A hard childhood and many years of poverty through which he struggled to success blocked the purposeful ripening of his genius and led to the establishment of certain antisocial characteristics. His earlier years were bitter. Much of his erraticisn, of his tendency to offend people, and of his inability to understand his environment, may be well accounted for on the basis of his hard struggle in a misunderstanding world which treated him roughly.

Only those who were close to Dr. Wightman realized the tremendous store of first hand knowledge that he had on tap. The writer remembers an instance in which he and Dr. Wightman were in consultation on a case in a small town. The writer asked at a drug store for some ammonium sulphate to make a globulin test on a specimen of spinal fluid. None was to be had. Dr. Wightman said, "I will make it" and he did it. Many of the instruments that he used in his surgical practice were of his own design and making and showed originality of a high order.

Even his death was unusual. His was one of the first cases of the myokymic type of epidemic encephalitis observed in this country, and the myokymia involved the diaphragm.

In the passing of Hugo Wightman, the Nebraska Medical profession lost a unique, though poorly appreciated member.

—A. D. Dunn.

EDITORIAL PARAGRAPHS.

With the May issue Modern Medicine, of Chicago, will be changed from a publication devoted to clinical medicine to a health magazine of broad-national service—a magazine devoted to community, industrial and institutional health problems, and the same will be changed to The Nation's Health.

The seventh edition of the American Medical Directory—a register of legally qualified physicians of the United States and Canada, and of those institutions, organizations, activities etc., directly related to the medical profession, is before us. It contains a list of 160,000 physicians, 7,500 hospitals, medical societies, medical colleges, medical journals, medical libraries, lists of specialists, etc., is revised to 1921 and contains some new and more convenient features.

What is said to be the only Indian medical clinic, is in operation at Winnebago in Thurston County, the seat of the agency for the Omaha and Winnebago tribes. The clinic has been in operation for three years and is declared a decided success.

The annual meeting of the American Medical Association occurs at Boston June 6 to 10. It is high time to pack your grip and consult your banker, for good things come high this year.

Pneumonia gave the highest mortality rate in Omaha last year, 277, and tuberculosis stands second, with 201 deaths.

The Creighton Medical College will give the usual premedical course in physics, chemistry and biology during the summer.

Dr. W. O. Bridges, Omaha, who was elected alternate delegate to the A. M. A., a year ago, has by the death of Dr. Aikin, succeeded to the delegateship and will attend the Boston meeting as delegate.

A division of Child Hygiene and Public Health Nursing is being created in connection with the State Bureau of Health. Miss Margaret McGreevy heretofore connected with the Bureau of Health is taking four months special course at the Western Reserve University, in preparation for this work of which she will take charge Sept. 1st.

Under the direction of Dr. Palmer Findlay, Omaha, chairman for Nebraska, of the Association for the Study and Prevention of Cancer, it is intended to feature a state wide cancer publicity week sometime in September. County medical societies are to be enlisted in the movement and meetings are to be held in every town.

The Bureau of Health reports that deaths from cancer in Nebraska have increased from 847 in 1919 to 977 in 1920 an increase of 130. One death in every 14 from all causes is a cancer death.

The June issue of the Medical Review of Reviews will be a special radium number dedicated to Mme. Curie. The issue will consist exclusively of articles on radium and its uses, written by the most prominent radiologists in the United States and Canada.

Copies will be sent complimentary to every physician interested in the uses of radium and any readers of this item who desire that issue may have it by asking for it from the Medical Review of Reviews, 51 East 59th Street, New York.

To The Editor:

Only five cities in the United States showed a cleaner bill of health than Omaha for the week ending April 30, and all but one of them are much smaller cities according to government reports.

Omaha's death rate was 9.5 as compared to the average death rate of the nation for that week of 12.4. The government reports include non-resident deaths. This fact places cities which have large hospitals at a disadvantage as cases which come from outside of the city are included. Despite this fact Omaha was only surpassed by Akron, Ohio, with a death rate of 5.7; Yonkers, New York, 7.6; Camden, New Jersey, 7.8; Lowell, Massachusetts, 9.2 and New Bedford, Massachusetts, 9.2.

Bureau of Publicity,
Chamber of Commerce, Omaha.

SOCIETY NOTES.

At the regular quarterly meeting of the Custer county medical society Dr. W. E. Talbot was elected president and Dr. Theodore Koefoot, secretary-treasurer. Six physicians from different towns in the county attending the meeting, had served in the recent war. The meeting was addressed by department commander Robert G. Symonds of the American legion.

The Nebraska academy of ophthalmology and oto-laryngology held its annual banquet at the Lincoln hotel, the evening preceeding the opening sessions of the state medical association. Dr. Harry Gradle, Chicago, was the guest of honor and spoke on, "Practical Primetry." Dr. D. D. Sanderson, Lincoln, gave a paper on, "Where Are We in the Treatment of Sinus Disease?" Dr. E. C. Foote, Hastings, was elected president, and Dr. Clarence Rubendall, Omaha, secretary-treasurer. About fifty men attended.

Advance notice is given that the Elkhorn valley medical society will meet at Norfolk about the first of July, and Dr. Herman Kretschmer, Chicago is expected to be the guest of honor.

Big preparations are being made to have a picnic dinner and outdoor meeting of the Saunders county medical society at Wahoo in July. Dr. E. O. Weber is chairman in charge of the arrangements.

The Franklin county medical society met April 20th, at Franklin. Lectures were given by Drs. C. C. Johnson and A. L. Smith, Lincoln.

At a meeting of the Johnson county medical society, Tecumseh, Dr. A. Sachs, Omaha, gave a talk on "Gastric Ulcer." Dr. Newell Jones, Omaha, a paper on, "Obstruction of the Pylorus in Infancy," and Dr. H. R. Miner, Falls City a paper on, "Congenital Dislocation of the Hip." Stereopticon pictures illustrating the topics were shown.

The Saunders county medical society at a meeting in Wahoo, April 14th, discussed appendicitis and local anaesthesia. Drs. A. I. MacKinnon and K. S. J. Hohlen, Lincoln, were present.

The Cass county medical society met at Weeping Water, April 27 for the purpose of electing officers and arranging a program for the year. Dr. G. H. Gilmore, Murray was elected president, Dr. A. R. Hornbeck, Murdock, secretary-treasurer. Able men from Omaha and Lincoln will be invited to discuss medical subjects of interest to the general practitioner.

The Kearney county medical society held its regular meeting at the home of Dr. and Mrs. Hapeman in Minden, Monday evening, April 11th. Dr. Thomas of Hastings presented an interesting paper on, "Oral Focal Infection." As the subject was of equal interest to dental surgeons, the dental surgeons of the county were present as guests of the society. After the program, a lunch was served by the hostess.

HOSPITAL NOTES.

The Mary Lanning Memorial hospital, Hastings, graduated seven nurses, April 28th.

The contract for the erection of the Good Samaritan hospital, Kearney, has been let for a sum approximating $170,000.

It is reported as practically certain that the uncompleted building of the defunct North American Hotel company, at Scottsbluff, will be taken over by the Methodist state hospital board and converted into a hospital. It is planned for the present to equip three of the five floors giving a capacity of fifty beds.

A nonfactional and nonsectarian hospital with 24 beds known as the Sidney hospital has been established at Sidney by Mrs. Edith Hostetter and was opened in April. The local physicians of Sidney constitute the staff.

Five nurses graduated from the Norfolk General hospital on Hospital Day, May 12th. The Campbell hospital, Norfolk, graduated one nurse April 27th.

It is reported that the business men of Falls City are about to underwrite the indebtedness of the Falls City Community hospital and place it on a permanent footing.

Omaha will this spring release from the hospital training schools 108 nurses by graduation, divided as follows: St. Joseph, 26; Clarkson, 14; Wise Memorial, 13; St. Catharine's, 9; Nebraska University, 11; Swedish Mission, 9.

The Midwest hospital, Scottsbluff, has again passed into the hands of Mrs. B. Harvey who formerly conducted it.

A suit for $100,000 damages has been filed against St. Catharine's hospital, Omaha, by a former employee who alleges permanent injuries due to a fall from a ladder while hanging curtains.

An effort is being made to establish a hospital at Holdrege under the patronage of the Lutheran Synod of Nebraska.

The financial difficulties that had threatened the perpetuity of the Taylor E. Lewis Memorial hospital, Superior, have been temporarily bridged.

NOTES ABOUT THE DOCTOR.

Wanted—Well established Eye, Ear, Nose and Throat practice in Nebraska. Address Box B, c/o Journal, 519 McCague Bldg., Omaha.

Dr. K. S. J. Hohlen, Lincoln, is receiving from a severe infection of the left hand and fingers.

Dr. Earl Matheny, Havelock, who surrendered his appendix and a crop of gall-stones, has recovered.

Dr. Guy Taylor, Lexington, is about to locate at Hebron.

Dr. R. E. Robinson, formerly of Crofton, has located at Ralston.

Dr. E. J. Fleetwood, formerly of Wakefield, is now located in Lincoln.

Dr. C. P. Fall, Beatrice, has been elected president of the Kiwanis club.

Dr. C. H. Campbell, Columbus, has been elected president of the Rotary club.

Dr. A. L. Hawkins, (colored), late of Ft. Scott, Kansas, has located in Omaha.

Dr. W. F. Conwell, Neligh, who has been ill for some time is slowly recovering.

Dr. J. A. Peters, Springfield, has been taking treatment in an Omaha hospital.

Hebron hospital has been established at Hebron, with Dr. F. C. Armstrong at the head.

Dr. T. J. Dwyer, Omaha, has been seriously ill for some time but is now convalescent.

Dr. F. W. Lake, Omaha, who was seriously ill at the Wise Memorial hospital has recovered.

Dr. M. F. Hall, Neligh, has gone to Chicago to take an extended course in internal medicine.

Dr. B. A. McDermott, Omaha, who has been critically ill from gastric hemorrhages, has resumed practice.

Dr. R. C. Talbot, Broken Bow, aged 73, suffered broken bones in both legs in a runaway accident on his farm.

Dr. J. P. Lord, Omaha, has recently been made an honorary member of the Los Angeles Orthopaedic association.

Ira Keneth Evans, son of Dr. W. S. Evans, Columbus, has been appointed to the West Point Military Academy.

Dr. Ernest G. Kieck, who has been associated with Dr. J. A. Peters at Springfield, has located at Shellsburg, Iowa.

Dr. G. N. Whittier, for the past two years resident of Lincoln has returned to Holdrege where he formerly resided.

Dr. T. L. Loofbourrow, Eureka, Calif., has been visiting the scenes of his boyhood at Peru, after an absence of thirty years.

Dr. Miles J. Breuer, Lincoln, read a paper on, "Principles of Dream Analysis" before the Nebraska Academy of Science.

Dr. T. E. Massey, Huntley, suffered the amputation of one foot, the result of an injury received from a mule he was leading.

The village of Loomis, being in need of a physician, circulated a petition asking a doctor in a neighboring town to locate in Loomis.

Dr. John W. Neville, formerly of Hildreth, has located at Stromsburg and purchased the office equipment of the late Dr. C. A. Anderson.

Dr. A. J. Ross, Minatare, having failed to contract all the infantile diseases at the proper time, recently suffered an attack of scarlet fever.

The Phi Ro Sigma Medical fraternity, Omaha, gave a banquet late in April, and subscribed a thousand dollars toward financing the National Phi Ro Sigma convention to be held in Omaha in September.

Dr. J. F. Edwards, Health Commissioner of Omaha, who was a Lt. Col. in the army during the war, has been given similar rank in the Medical Reserve Corps.

The sympathies of the organized profession go out to Dr. and Mrs. N. T. Johnston, Upland, in the loss of a daughter during the week of the annual meeting.

Dr. Marion E. Farber, a native of Nebraska City, a medical missionary in India, after a visit to relatives in this country has returned to her work in the Madras Presidency.

Dr. F. A. Long, Madison, gave a lecture to the senior class of the Nebraska University College of Medicine April 22, on, "A Proper Viewpoint in Beginning Medical Practice."

Dr. John W. Mitchell, Superior, was elected Grand Commander of the Knights Templar of Nebraska for the coming year, at the forty-ninth annual conclave held in Lincoln.

The doctors, dentists and druggists of Beatrice, entertained the members of their professions resident in the county outside of Beatrice, at a banquet in the Chamber of Commerce recently.

Dr. Palmer Findley and Dr. Clyde Roeder, Omaha, were guests of honor of the Fremont county, Iowa, Medical society at the April meeting and both gave addresses on the cancer problem.

Dr. L. B. Pillsbury, formerly on the staff of the Lincoln State hospital now in the medical corps of the army and recently stationed at Angel Island, San Francisco, has been ordered to Manilla.

A field hospital unit of the Nebraska national guard has been organized at Lincoln. Dr. Bruce Pates will be medical administrative officer and Dr. A. D. Munger will have charge of the surgical work.

The friends of Dr. W. D. Guttery, recently of Pilger will sympathize with him in the loss of his wife at San Antonio, Texas, recently. Dr. Guttery was engaged in institutional work in this state for some years, was Supt. of the Norfolk Hospital for the Insane at one time, and is at present connected with a hospital for the insane at San Antonio.

Dr. H. L. Starkey, Wood River, had the calamitous experience of having his auto turn over with him and an appendicitis patient he was taking to the hospital at Grand Island for operation. The patient was cut about the arms and body by flying glass and the doctor had his sternum fractured.

Dr. A. W. Lagerquist of the China Inland Mission, Laohokow, has been visiting relatives in Omaha. He operates a hospital in Laohokow an inland city of 200,000 people without railroads or street cars. He has been decorated by the Chinese government three times for heroic service in times of great stress. He has been in the Chinese mission field for thirty years and this is his first visit to America in nine years. He will remain in this country one year and is going to carry on an extensive campaign in the United States and Canada for the starving Chinese.

HYMENEAL.

Dr. R. E. Olney, house physician at the Lincoln Sanitarium, and Miss Lillian Yunger, of Cincinnati, Ohio, were married at the latter place April 28.

NECROLOGY.

Dr. A. L. Muirhead of Omaha, died April 17th, at the age of 57. He was a graduate of the University of Michigan, came to Nebraska in 1894, practiced at Hemingford, Lyons, Winside and Central City; moved to Omaha and became connected with the Creighton Medical college in 1904 as professor of pharmacology, a position he retained to the time of his death. From 1913 to 1915 he was Dean of the college. He was at one time a member of the State Board of Health and for eight years was editor of the Western Medical Review. Several years ago he published a "Materia Medica for Nurses," which has found a ready sale and is an official text book in many training schools for nurses. In the Journal A. M. A. Mch. 5, 1921 was published, "An Autograph History of a Case of Addison's Disease," being in part a personal narrative of his eventually fatal disease.

Dr. Agnes V. Swetland, for thirty years a practitioner of Omaha, and an active but quiet social worker, died April 16, aged 74.

BOOKS RECEIVED.

The New Pocket Medical Formulary. By William Edward Fitch, M. D. Cloth. Price $2.50 net. Pp. 470. Third Edition—Revised. Philadelphia: F. A. Davis Company. 1921.

Handbook of Electrotherapy for practitioners and students. By Burton Baker Grover, M. D. Cloth. Price $4.00 net. Pp. 420 with illustrations. Philadelphia: F. A. Davis Company. 1921.

New and Nonofficial Remedies, 1921. Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1921. Cloth. Price, postpaid, $1.50. Pp. 418-xxxii. Chicago: American Medical Association, 1921.

The Watering Places of Switzerland. Paper. Pp. 86, illustrated with photographs and charts. Any physician interested in this subject may write to the Official Information Bureau of Switzerland, 241 Fifth Ave., New York, for a gratuitous copy of the work.

Birth Statistics for the birth registration area of the United States 1919. Paper. Pp. 315. Price 35c. Washington: Government Printing Office. 1921.

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CONTENTS

Page

Infantile Eczema, Floyd S. Clarke, M. D., Omaha, Neb. 193

Infantile Cyclic Colic, John V. Reilly, M. D., Grand Island, Neb. 195

Dry Milk in Infant Feeding, Earl V. Wiedman, B. Sc., M. D., Lincoln, Neb. 197

A Civilian Surgeon's Story of the Great War, H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb. Formerly Lt. Col., M. C., U. S. Army 201

Three Hysterectomies, W. H. Betz, M. D., Omaha, Neb. 204

The 53rd Annual Meeting of the Nebraska State Medical Association, Lincoln, Neb., May 9-12, 1921 206

Page

Books Received 215

In Memoriam 216-217

Editorial 218

A Case of Arthroplasty of the Temporo-Maxillary Articulation, S. R. Hopkins, M. D., Hastings, Neb. 221

Diagnosis of Pelvic Lesions by the X-Ray, C. G. Moore, M. D., Fremont, Neb. 223

Society Notes 223

Hospital Notes 224

Notes About the Doctor 224

Necrology 224

Hymeneal 224

INFANTILE ECZEMA*

Floyd S. Clarke, M. D., Omaha, Neb.

Eczema in infants and young children is by no means an uncommon condition. Its management and treatment is far from being satisfactory. This study is undertaken not with the idea of being able to add anything new to your knowledge, but that I may be able to call to your attention certain facts which may refresh your memory.

The breast fed baby with an eczema has an irritable, delicate skin, a skin that when an external irritant is applied a dermatitis results. Probably the reason for this tendency to skin irritability rests on some chronic, metabolic error on the part of the individual baby. The eczematous baby may be unable properly to assimilate any or all of the food elements which are contained in breast milk. Breast fed babies with eczema will usually show an excess of fat in the stool. In artificially fed babies the sugars are frequently at fault. Babies fed on the proprietary foods are especially prone to develop eczema. If one will remember that the sugar content of nearly all the proprietary foods is relatively high the reason for the development of the eczema is apparent.

Eczema is nearly always associated with a deficient kidney elimination and a scanty, concentrated, acid, urine. It occurs much more frequently in the fat healthy baby although it may occur in the underdeveloped and poorly nourished infant. These babies are frequently overfed. The intervals between feedings are often irregular. They are constipated. Kerley states that intestinal indigestion and toxaemia is not a common cause of eczema in his experience. He regards butter fat, milk, cane sugar and orange juice as the most common causes of eczema. Freeman prohibits stewed fruits and cream. Czerney believes that next to milk, eggs are the most frequent causes of eczema. Abt states that overfeeding with milk, either mother's or cow's, has a direct influence on the production of eczema in some babies. Just what element in milk is at fault, he is unable to say. He places no reliance on the relationship between dentition and eczema.

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*Read before Omaha-Douglas County Medical Society, March 8, 1921.

Bronchial asthma frequently accompanies eczema. Ravitch and Sternberg in a study of mothers whose infants were afflicted with eczema, were confronted with the peculiar fact that these mothers had an impaired function of the thyroid gland. They noted that the eczema persisted in the baby even after being weaned from the breast. On questioning the mothers, they found that a number of them had thyroid enlargement during a considerable portion of their pregnancy. Often the enlargement was accompanied by rapid pulse, palpitation, and bulging eye. They believe that there is a deficient fat metabolism in those infants whose mothers had excessive disturbance of the thyroid during pregnancy or lactation. The type of eczema occurring in these infants is a dry eczema, no oily secretion being present.

Chas. J. White and L. W. Hill have done considerable work with the skin food tests and stool examinations. White analyzes three hundred cases and concludes that individuals with eczema react positively to food tests and stool examinations and that proper dietary regime will in large measure control eczema.

Hazen states that the causes of eczema are—external irritation, external infection, local predisposition of the tissues, disturbances of the vegetative nervous system, disturbed food assimilation and urticaria. Urticaria is probably due to a protein hypersusceptibility.

Cultures have been made from the eczematous surface and the staphylococcus aureus has been found to be the predominant organism.

Medaela regards eczema in its primary stage as a dermatitis, the exciting cause of which may be any internal or external irritant and that the staphylococcus aureus together with other organisms, is responsible for converting this dermatitis into an eczema. Thus we see that a wide variety of causative factors enter into the etiology of eczema. Two facts seem to stand out prominently:

1. The eczematous infant probably has an inherited predisposition to an irritable or delicate skin and that when some external irritant is applied an eczema results.
2. That this tendency to irritability on the part of the skin may be caused by and certainly is aggravated by a lack of proper food assimilation by one or more of the food elements.

We have all had these cases under our care and I am sure will admit that they are difficult to treat and have a distinct tendency to recur after an apparent cure. In order to be successful in the management of these tiny patients, one must have the thorough cooperation of the person having the baby in charge. The physician must be persistent in his attention to the details of treatment. In the large majority of cases we see, the eczematous process is confined almost entirely to the face. Occasionally a patch will occur on the extremities or over the body, but this is exceptional. These cases vary from a small, dry, slightly scaly reddened area on either cheek, to a mass of scabs and crusts on an inflamed oozing surface. Most of the cases we see are of the dry, scaly variety.

It seems to the writer that every small, beginning eczematous patch, especially on the face, is frequently the forerunner of a larger area of involvement. It is therefore essential that an earnest endeavor be made to find the cause and treat eczema cases early, when the first small patch of involvement is apparent. In a great many instances the application of a mask over the face has assisted us. For this purpose an ordinary stocking mask has been of service.

That portion of the stocking which will best fit the face is cut out. Slits for the eyes, nose and mouth are cut and the mask pulled over the face. A stool and urine examination should always be done. A sample of the mother's milk should be obtained and the fat percentage ascertained. Frequently free fat globules will be found in the feces.

Regulation of the mother's diet, giving the baby a measured amount of water or cereal water before the breast and occasionally giving the baby skimmed breast milk, will usually clear up this condition. The nursing baby with eczema should not be weaned. Experience has proved that even if breast milk seems to be the cause of the eczema, the condition does not improve on taking the baby from the breast. A careful regime as to the regularity and quantity of food should be instituted. The four hour schedule in our experience, seems to be the best.

If the baby is taking food other than

breast milk, at times a complete change of food is essential. At other times cutting down the quantity is necessary. One must remember in treating these cases that babies will frequently take vegetables and cereals at an earlier age than has formerly been taught.

The application of salves to the affected area undoubtedly is a part of the treatment. In commenting on this portion of the treatment, it is not my desire, in any way, to infringe on the dermatologist. Irritating applications are absolutely contraindicated. Probably our best results have been obtained by using the mask as described above and applying underneath that mask, either Lassar's paste undiluted or made less strong with oxide of zinc ointment. Occasionally we have found that tar added to the ointment assists in the healing process. For this purpose we have successfully used the liquor carbonis detergens of the British Pharmocopaea. In conclusion the following points may be emphasized:

1. Eczema has a wide variety of etiologic factors. It should be our earnest endeavor to ascertain the possible cause of each case of eczema if we wish success in its management and treatment.

2. Certain nursing babies with eczema will have the eczema throughout their nursing career, in spite of the most careful regulation of their food as to time, quantity and quality. The most the physician can hope for with this type of infant is to keep the eczema under control as well as possible, endeavoring to ease the intense pruritus.

3. Food and the metabolism of food plays an important part in producing eczema in infants and children. It may be said however, that the food tests as applied on the individual baby may or may not be positive in interpretation, but when applying the results of a positive test in a therapeutic way; the eczema does not always improve.

The regulation of the diet in the treatment of eczema is largely the result of practical experience.

4. The control of the intense itching is one of the essentials of treatment. Irritating salves and applications seem to enhance this pruritus and increase the dermatitis. Soothing applications with the addition of an antipruritic are indicated.

INFANTILE CYCLIC COLIC.

John V. Reilly, M. D. , Grand Island, Neb.

This condition is not to be confused with the ordinary colic of infants which we find due to improper food metabolism or exposure but is a specific condition characterized by its peculiar periodic persistency and chronic nature.

It is so frequent and so important and the average physician so unable to cope with it, that to my mind it bears considerable investigation. Although we refer to it as a symptom of intestinal disturbance produced by spasmodic contraction with gaseous distention of the bowel, we have been at a loss to account for its periodic persistency especially when it occurs nightly for three and four months of the new baby's life. We hear it referred to as idiopathic colic, habitual colic, three or four months colic and other names, but that is as far as we get, a name without a diagnostic meaning. And not much headway in the permanent relief of the condition.

As to the relief of the symptom alone, we usually have obtained good temporary results with treatment but as to the elimination of the cause, our efforts so far have been fruitless. At this point it is natural to assume that in making the diagnosis of this form of infant colic, we have eliminated all metabolic food derangements such as high sugar or high fat feeding, irregular and excessive feeding and overdue exposure conditions. The periodic nature rather than a persistent pain distinguishes it from an inflammatory intestinal condition or a nervous derangement and the nonsuccess obtained in controlling the diet displaces it out of the category of food metabolism etiology alone.

It has appeared to me for some time that the cyclic nature of the disturbance, that is, appearing at a certain hour every night without any perceptible disturbance in the intervening hours, classes this condition as an acid accumulation or relative acidosis reaching a maximum intensity at a certain stage.

We have tried as preventive measures, food control, alkalies for the bowels and carminatives but only with the effect of having the recurrence again the next night.

As a focus of infection to be looked for is the prevailing method of treating doubtful acid conditions nowadays, and from necessity must rule out as a source the teeth and tonsils, is it not possible that the kidneys might be harboring some etiological factor.

Let us examine the natural highly concentrated urine of the newborn which is usually clear immediately after birth, but within a few hours becomes cloudy and remains so for four or five days, microscopically showing leucocytes, hyaline and epithelial casts, renal epithelium and albumin. The amount of albumin is found to be small and varies considerably, but investigation has shown it appears in the urine of all newborn infants (Knoppelmacker, Vienna) and is found to be a nucleo albumin. This nucleo albumin coming from the kidneys rather than the blood presupposes a damage to the parenchyma of the kidney due to uric acid infarction. After four or five days the urine shows a brick dust sediment which is most profuse in breast fed infants and has been shown to be due to the uric acid infarctions of the newborn and the resulting renal damage to the parenchyma and in a large number of cases is found up to the third and fourth month of life.

Thus having been proven to us that the urine is an undoubted source of irritation to the newborn, first, from the pathological, second, from chemical investigation and third, from a general understanding that the acidity of the urine varies in direct proportion with the alkalinity of the blood and that this in turn depends upon vital resistance which is very low in infants, is it not right to conclude the highly concentrated uric acid accumulation in the kidneys is the natural etiological cause of our cyclic colic.

In the furtherance of this theory I have deviated from the ordinary routine treatment of colic cases and it has been my custom for some time to treat these cases not only in the paroxysmal stage with antifermentatives and enemas but to give potassium citrate and sodium bicarbonate in small doses well diluted in the intervening hours at regular intervals with good results. These alkaline salts being given not purely as antacids, but also as alterative medicines, the high concentration of the urine gradually lessening until the infant is passing urine in sufficient quantities to freely wash out all pathological debris and being assisted by a relative increase in the alkalinity of the blood, there is an assumption of proportion between the acids and alkalies of the system and a natural tendency to relief of the spasmodic condition.

As all physicians have had more or less experience with this form of colic, it is not necessary to go into great detail in outlining cases but I have here selected three routine cases as examples.

Case I: Nursing baby on second day of birth cried continuously. Owing to the small amount of milk secreted by mother, and the nurse stating baby's bowels and kidneys were acting freely, and that she was giving only a small amount of water occasionally, I naturally supposed want of food was the cause of the disorder, and advised boiled skimmed milk for twelve hours. On return patient was somewhat better but still cried considerably. Ordered potassium citrate and sodium mixture and after two doses at intervals of two hours baby slept well and apparently was entirely relieved. Was called again in two months, mother stating baby had night colic for one month and she had done everything the neighbors told her to do. Prescribed alkaline mixture every three hours and after twelve hours treatment baby had no more night spells but advised continuance of treatment three times daily for one week with no recurrence of colic.

Case II: Baby three months of age with cyclic colic for past two months, irregular feeding and constipation. Advised interval feedings which regulated bowels but baby still continued to have cyclic colic. After two days of alkaline mixture baby slept well at night time with no recurrence of colic.

Case III: Baby two months of age, healthy looking, birth weight 7½ pounds, present weight 12 pounds, two well digested bowel movements daily, nurses every three hours, kidneys act easily after each nursing and sleeps well in daytime between feedings. Mother states baby wakes up every night about nine o'clock and begins its colicky attack which usually lasts until three o'clock in the morning and then quiets down without any recurrence of the colic until nine o'clock next night. The usual antifermentatives and enemas are given but sometimes with only slight improvement. The mother's diet is without fault and she has regular bowel movements. Baby gets plenty of outdoor exercise. This is one of our most typical cases and many times there is a decided lack of confidence shown in the skill of the medical profession and a consensus of opinion of the parents that here is a condition that will have to be outgrown.

Under the alkali treatment as outlined, I have had decided good results in these cases and in the majority of cases complete recovery in a short time. It is well to note here the fact that the uric acid found in the urine of these babies is at times so small that it can hardly be demonstrated and after the fourth month is invariably found wanting entirely. We occasionally have a patient that prolongs the time of the colic up to the sixth month and I have attended a few cases that were diagnosed nine months colic but could never demonstrate the slightest amount of kidney irritation in these cases but always found a disordered food metabolism. I have under my treatment assumed that the acid condition in the bowels was an auto-intoxication, the bowels acting as a recipient of the systemic explosion and never that the focus was in the intestines in this cyclic affection.

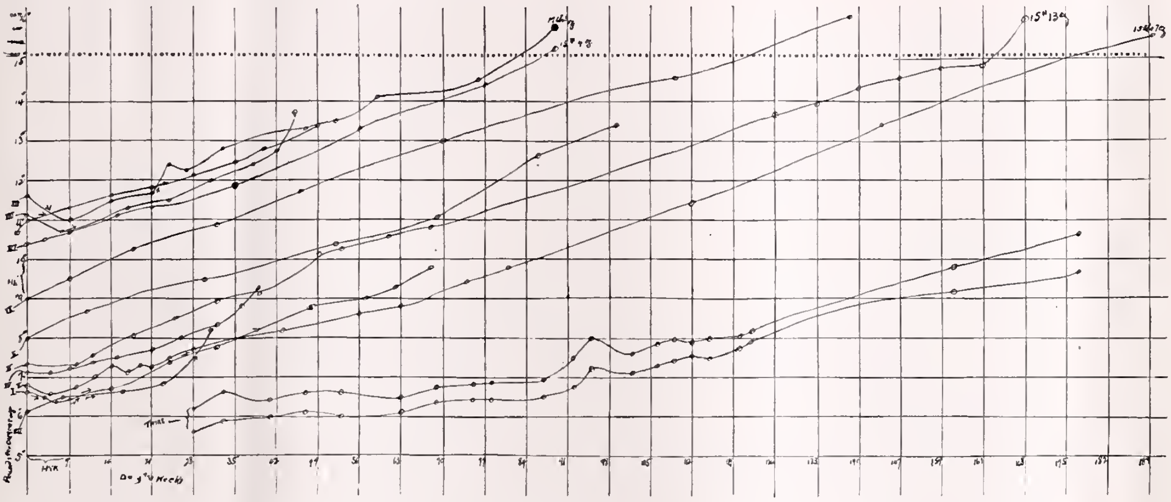
In conclusion, I will say that although I have never seen a paper before on this subject as a specific affection, I trust I will hear considerable discussion of my views and a better outlook through investigation and treatment for the little ones and their exhausted parents.

DRY MILK IN INFANT FEEDING.

By Earl V. Wiedman, B. Sc., M. D.,Lincoln, Neb.

To obtain the best milk for infant feeding in smaller cities, is much more difficult than in the larger cities.

About two years ago it fell to our lot to use poor cow's milk or some of the other substitutes. We had some good cow's milk for artificial feeding, but not enough. Large numbers were always on the waiting list and consequently we could never get the milk when we wanted it.



With our knowledge of Dennett's successful use of dry milk and his favorable mention of it, we resolved to give it a trial. Dry milk as you all know, is not a new food, but has been used many years in this country and abroad.

The cases that I have selected represent the average case as it comes to our office. We have found that we can feed dry milk to almost any baby; in fact we have found but one baby that did not do well on dry milk and this baby did exceptionally well on modified cow's milk.

In this group of eleven cases, there is one case of lactic acid milk feeding (prepared according to the method used by Marriott at the Children's Hospital, St. Louis), and one case of complemental feeding with dry milk. These cases were put in for the comparison with the other eight cases.

In the use of dry milk, you will readily see:

1. That it has all the advantages of a boiled milk.
2. It is a sterile food and is easily kept over periods of time.
3. It can be prepared with all the simplicity of condensed milk, (which is no small item to the average mother).
4. It has a low fat content.
5. It still retains its vitamines, according to Hess in his recent article.

We have found, in our brief experience of two years, that the dry milk is much more easily handled than the modified cow's milk and this is especially true in the younger infants. It has been our plan to feed these babies dry milk until the fifth or sixth month, then gradually change to whole cow's milk. We always aim to change before starting on cereals and vegetables.

The question of vitamines naturally arises after feeding dry milk five or six months. We consider every artificially fed infant a candidate for scurvy and rickets. We, therefore, start our cases immediately on orange juice and cod liver oil. Most of the cases in the beginning were fed oleomargarines. We got the idea from Howland and Parks of Baltimore, to feed these cases cod liver oil early. We find that dry milk, being low in fat, the babies will handle fair amounts daily, it being added to each feeding and beaten in with an egg beater. Most of the babies take it regardless of the taste. We have had no scurvy or rickets, and our babies look as well as the babies on modified cow's milk.

In studying these cases you will see that some have made very good gains, others fair gains, but the average gain is very good.

Case No. 1.
Family History:
(a) Unknown, (Adopted baby brought up from Kansas City.)
Personal History:
(a) Wassermann reaction negative.
(b) Present weight, 6 pounds 10 ounces.

Feeding History:
(a) Whole milk, ounces 7
Water, ounces 14
Dextri-Maltose, tablespoons 5
(b) Seven feedings, three hour feeding schedule.
(c) Vomiting and crying constantly.
(d) Put on dry milk. Gained 51 ounces in 68 days.
(e) Was a comfortable, happy baby after putting on dry milk.

Case No. 2.
Family History:
(a) Negative.
Personal History:
(a) Labor breech.
(b) Birth weight, 6¾ pounds.
(c) Age, 6 weeks.
Feeding History:
(a) Whole Milk, ounces 6
Water, ounces 7
Oatmeal water, ounces 7
Lime water, ounces 1
(b) Cries after each feeding. Put on dry milk. Gained 135 ounces in 172 days. This baby made an 8 weeks' trip to Estes Park, and had no disturbance while gone.

Case No. 3.
Family History:
(a) Father well.
(b) Mother well.
(c) Two other children, 7 and 4 years, both well.

Personal History:
(a) Normal delivery.
(b) Birth weight 7½ or 8 pounds.
(c) Age, 5 months.
(d) Physical examination, fairly well nourished infant.

Feeding History:
(a) Entirely breast fed first week.
(b) Mother not well.
(c) Then fed on skimmed milk, cried constantly.
(d) Then fed on a proprietary food and breast.
(e) Then a different proprietary food and breast.
(f) Present formula:
Whole milk, ounces 13
Water, ounces 16
A proprietary food, table sp. ... 2½
Milk of magnesia, ounces 1
(g) 4-ounce feedings every three hours. 2 night feedings.

Chief complaint:
(a) Underweight.
(b) Constipated.
(c) Restless, cries constantly, cannot sleep at night.
(d) Present weight, 11 pounds ½ ounce.

Treatment:
(a) Four hour schedule, 5 feedings, breast first, then bottle.
(b) Formula: Whole milk (boiled 3 minutes) ounces 25
Water, ounces 10
(c) Gained 38½ ounces in 49 days, a very comfortable baby.

Case No. 4.
Family History:
(a) Father and mother well.
(b) No other children, no miscarriages.
Personal History:
(a) Age 12 weeks.
(b) Birth weight, 7 pounds.

(c) Instrumental delivery, marked on forehead.

Feeding History:

(a) Mother had breast abscesses and did not nurse baby.

(b) Formula:

Top milk, ounces	16
Water, ounces	19
Lime water, ounces	1½
Milk sugar, ounces	1
Milk of magnesia, ounces	1

(c) Feeding 4½ ounces every 3 hours, 7 feedings.

Chief complaint:

(a) Vomiting.

(b) Does not gain.

(c) Cries a great deal.

(d) Bowel movements twice daily, very hard.

Physical Examination:

(a) Athreptic Infant.

(b) Weight, 7 pounds.

(c) Depression on skull from forceps.

Treatment:

(a) Put on dry milk. Gained 91 ounces in 119 days.

Case No. 5.

Family History:

(a) Negative.

Personal History:

(a) Baby in fair physical condition.

(b) Birth weight, 6 pounds 13 ounces.

(c) Present weight, 8 pounds.

Feeding History:

(a) Breast fed one week.

(b) Mother had influenza at the time of delivery, no pneumonia.

(c) Formula:

Whole milk, ounces	12
Water, ounces	14
Dextri-Maltose Tablespoons	3

Chief complaint:

(a) Diarrhea.

(b) Some vomiting, not a great deal.

(c) Crying a great deal, restless at night.

Treatment:

(a) As the baby was making good gains in weight, we decided to stay on the modified cow's milk. We boiled the milk and reduced the sugar. Feeding the modified cow's milk for 7½ weeks.

(b) Changed to the dry milk. Baby very comfortable, slept well.

Case No. 6.

Family History:

(a) Negative.

Personal History:

(a) Normal delivery.

(b) Birth weight, 9 pounds.

(c) Age, 2 months.

Physical Examination:

(a) In fair physical condition.

(b) Weight, 10 pounds 6 ounces.

Feeding History:

(a) Never breast fed.

(b) Present formula:

Whole milk, ounces	9¼
Water, ounces	6½
A proprietary food, table sp.	3

Chief Complaint:

(a) Baby cannot sleep.

Treatment:

(a) Put on dry milk. Gained 75 ounces in 89 days.

Case No. 7.

Family History:

(a) Nothing known.

Personal History:

(a) Adopted baby.

(b) Birth weight, 3 pounds 14 ounces.

(c) Present weight, 6 pounds 2¾ ounces.

Feeding History:

(a) On condensed milk for the first 5 weeks.

(b) Vomited and cried constantly.

(c) On food for the past week, still vomiting and crying.

(d) Commencing at 6:00 A. M., feeding 3½ ounces every 2 hours with 2 night feedings.

Bowel movements:

(a) 2 or 3, when milk of magnesia was given or suppository used.

Treatment:

(a) Dry milk.

(b) Gained 31 ounces in 32 days.

(c) Baby very comfortable.

Case No. 9.

Family History:

(a) Negative.

(b) No other children.

(c) No miscarriages.

Personal History:
- (a) Instrumental delivery.
- (b) Full term.
- (c) Birth weight, 8 pounds.
- (d) Weighed 7¼ pounds at 7 weeks.
- (e) Age eleven weeks, weight 9 pounds.

Feeding History:
- (a) Breast fed first 7 weeks.
- (b) Formula:

Whole cow's milk, ounces	1½
Water, ounces	1½
Dextri-Maltose No. 3, tablespoonful	2

- (c) Feeding every 2½ hours.

Chief Complaint:
- (a) Vomiting.
- (b) Constipated, using milk of magnesia or suppositories.

Treatment:
- (a) Three hour feedings, 6, 9, 12, 3, 6, 9, 2, A. M.
- (b) Both breasts preceding each bottle of dry milk.
- (c) No cathartics or suppositories.
- (d) Results, no vomiting, bowel movements better, large gains in weight first 3 days. Gained 113 ounces in 124 days.

Case No. 10.

Family History:
- (a) Nothing known.

Personal History:
- (a) Adopted baby.
- (b) Birth weight, 6 pounds.
- (c) Present weight, 6½ pounds.

Feeding History:
- (a) Condensed milk first 2 months. No gain or loss.
- (b) Then condensed milk plus a proprietory food.
- (c) Weighed 7½ pounds at one time but now weighs 7 pounds.
- (d) Then put on formula of modified cow's milk.
- (e) Formula:

Whole cow's milk, ounces	14
Water, ounces	14
Dextri-Maltose No. 1 tablespoonfuls	3

Chief Complaint:
- (a) Vomiting after each feeding.
- (b) Bowel movements, 6 to 12 per 24 hours, green watery, a great deal of mucus, some heavy bean-like curds.

Treatment:
- (a) Eiweiss milk for 1 week.
- (b) 4½ ounces every three hours. Seven feedings.
- (c) Dry milk gradually added to the Eiweiss. Gained rather slowly at first. Gain of 130 ounces in 188 days.

Case No. 11.

Family History:
- (a) Negative.

Personal History:
- (a) Twins, full term.
- (b) Normal delivery.
- (c) Birth weight, 5 pounds, 4½ pounds.
- (d) Age 4 months.

Feeding History:
- (a) Modified cow's milk.

Chief Complaint:
- (a) Not gaining.
- (b) Crying most of the time.
- (c) Diarrhea. 12 to 15 bowel movements daily.

Treatment:
- (a) Eiweiss and dry milk.
- (b) Gained 71 ounces in 154 days.
- (c) Gained 65 ounces in 154 days.

Case No. 5 is interesting in that the child was fed the first seven weeks on modified cow's milk; the remainder on dry milk. The baby was very uncomfortable on the cow's milk, had a great deal of gas, crying, sleepless and very restless, some vomiting and diarrhea at times. While on the dry milk, she was a very comfortable baby, slept well, no vomiting. The gain on dry milk equalled the gain on modified cow's milk.

Case No. 11, (twins) represents the extreme type of athrepsia. It was a long time before there was any gain. Their tolerance for food was very low. Just about the time they would get enough to gain, diarrhea commenced, consequently we had to reduce our dry milk and increase the Eiweiss, and gradually build up their tolerance again. We continued on this method, until they made fairly good gains.

After our brief experience of two years, we have come to the conclusion that dry milk is a distinct advantage for the following reasons:

1. When there is any question as to the kind and purity of the milk.
2. Especially as a summer food; it is always sterile, keeps well and is easily prepared.
3. In traveling long distances it is very useful.
4. That it is more easily handled by the younger infants.
5. Is more economical as a food for complemental feeding.
6. It must be remembered that these babies, as all artificially fed infants, should be kept under the closest observation. Accurate and frequent weighing is necessary to determine gains or losses in weight. We increased the food only as the weight curve indicated, providing the tolerance permitted. The above cases were weighed at the office when possible and at the home by us when it was necessary. Infant feeding, carried on in this manner is much better than hospitalizing these little patients.

A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb. (Formerly Lt. Col. M. C., U. S. A.)

CHAPTER III.

The members of the Goldthwait unit left the Hotel Curzon, where we had been staying in London, during June 11 and 12, 1917. Those assigned to Liverpool, Edinburgh, Glasgow and Aberdeen were the first to leave.

Lieutenant C. L. Hall of Washington and I, assigned to Cardiff, left London on the afternoon of June 12th; afterwards we learned that we just missed one of the worst air raids that London had during the war. We arrived at Cardiff at 7 o'clock in the evening. In keeping with the hospitality already shown us, we were escorted to the hotel by a fellow traveler and were cordially received by several Cardiff citizens, who promptly recognized the first of the American uniforms to arrive in that territory.

A young British officer, home on leave, and his father insisted upon our spending the evening at their home. This was typical of the cordial treatment we had during our whole stay in Great Britain. Minor incidents of a different character were nothing to the courtesies accorded us by nearly all of the English, Irish, Scotch and Welsh with whom we came in contact.

We were quite apprehensive as to the manner in which we might be received, not only by the British officers, but by the soldier patients. It took some time to establish the fact that we were on duty with the British with a sincere desire to be of service. When this had once been accomplished, however, we had very little difficulty in getting along either with the officers or with the men.

The Welsh Metropolitan War Hospital Whitchurch near Cardiff
T. Harding Son & Co Bristol.

View of the Hospital from the outer edge of the "fan", showing wards. The tower was near the central offices.

An interesting discussion arose over the question of uniforms. The insignia of rank are of course entirely different in the British and American armies. Very few of the British could tell whether we were corporals, sergeants, or captains, consequently we missed many a salute in the first few weeks because of the absence of sleeve marks, Sam Browne belts and sticks. After General Pershing had set a precedent for wearing the Sam Browne belt and after we learned how to carry gloves and canes, we were more readily recognized as proper officers by members of the British military establishment.

On the morning after our arrival in Cardiff, we reported at the Welsh Metropolitan War Hospital to Lieutenant Colonel E. Goodall, the Commanding Officer, and to Major S. Alwyn Smith, the officer in charge of the Orthopedic service. The hospital was a beautifully built and equipped institution constructed a few years before the war, for the care of mental patients. It was built in the shape of an open fan with the administrative offices at the center of the handle. The service buildings, were spread out over the fan proper with the corridors, passages, etc. Ten two-story wards extended out from the edge of the fan. There was plenty of space for about 1200 patients. The wards on the left of the fan with operating rooms, plaster rooms, X-ray, etc., were set aside for the orthopedic service. The right hand side of the fan was occupied then and later at different times, by the surgical, medical and mental services.

Here at the hospital, we were received cordially. It was not understood, however, just what our position, status or duties were to be. For some days, therefore, we waited about with nothing to do and no place to go.

After some little correspondence, however, with Sir Robert Jones, the liaison officers in London and the British quartermaster department; we secured for ourselves certain duties in the hospital, quarters outside the hospital, two meals a day in the officers mess and allowances from the British for sustenance. Salaries were paid by the United States.

Very shortly Colonel Goodall provided an office or examining room for the Americans, which operated under the direction of Major Smith in the conduct of the orthopedic department. The medical officers on duty at this time were as follows: There was a young Egyptian surgeon, Mr. M. Bayumi of Cairo. He was an E. R. C. S., and a fine worker. There was also a brilliant young surgeon from Lisbon, Dr. A. Bizarro. These two were assigned as assistants to two Cardiff surgeons, Mr. J. O. D. Wade and Mr. Geary Grant. These gentlemen were engaged as civilian contract surgeons. Each had charge of two wards of about fifty beds each.

In addition Dr. C. D. Story and Dr. W. H. Braddock, two Americans, were on duty with the British. Dr. Story was Red Cross and Dr. Braddock, R. A. M. C. The latter with his wife had just arrived in England after an exciting year in Serbia. They had both endured severe privations in the Serbian retreat.

In a word, there were enough surgeons on duty for the three hundred patients then in the orthopedic division of the Hospital. I soon saw that if Lt. Hall and I were to have an opportunity we must first locate special work and then demonstrate our ability to do it.

A single trip through the hospital revealed the fact that, as always in any large hospital, civilian or military, there were, from the orthopedic standpoint, a number of neglected cases. One found cases of chronic osteomyelitis with shell wounds that had not yet been X-rayed. There were ununited and malunited fractures poorly splinted or not splinted at all. There were gunshot wounds of wrist and ankle in which healing was taking place, with hands in palmar flexion and feet in plantar flexion. These were all things to correct. Orthopedic principles were not being generally applied. Major Smith was a pupil and former assistant to Sir Robert Jones, but he had been on duty only a short time and I felt that we could be of help to him in these matters. None of the other surgeons referred to, had had special orthopedic training.

In the Cardiff area the care of the wounded generally was under the jurisdiction of the Third Western General Hospital. This hospital, or center, had about 7,000 beds. From this entire area we were supposed to receive patients requiring orthopedic treatment. Actually they sent us only a fraction of such cases. Later, however, our orthopedic service, including six auxiliary hospitals, grew to about 700 beds. This included 50 beds for pensioners—for whom we did quite a lot of good work.

Soon after taking up the work, Major Smith agreed to a policy of having all new patients admitted through an examining room, and those already in the hospital, up for reconsideration at least once a month.

Very soon after the second Goldthwait unit arrived in Great Britian, members of this unit were distributed to the British Orthopedic centers to assist in the work and to become familiar with methods of administration, as well as methods of dealing with patients; which had been demonstrated to be useful by the experience of the British. Shortly after this time the organization of our orthopedic service at Whitchurch, was as follows:

Lt. Col. E. Goodall, R. A. M. C., Registrar. Welsh Metropolitan War Hospital.

Capt. J. R. Beatty, R. A. M. C., Registrar.

Consulting Surgeon, Col. J. Lynn Thomas, C. B., C. M. G., Deputy Inspector Military Orthopedics—Western Command.

Officer-in-Charge Orthopedic Division, Major S. Alwyn Smith, D. S. O., R. A. M. C.

Assistant, Capt. H. Winnett Orr, M. R. C., U. S. A.

General Surgeon, Mr. J. O. D. Wade.

Examining Room, Monday 2-4:30; Thursday 10-12:30.

Ward M-1—Capt. Orr. 70 beds.

Ward M-1a—Dr. Bayumi. 64 beds.

Ward M-2—Lt. W. H. Braddock, R. A. M. C. 68 beds.

Ward M-2a—Lt. H. H. Dignan, M. C., U. S. A. 65 beds.

Ward M-3—Capt. C. H. McKenna, M. R. C., U. S. A. 54 beds.

Ward M-3a—Lt. Davis. 50 beds.

Ward M-4—Capt. Orr, Lt. L. W. Hughes. 45 beds.

Ward M-5a—(Officers' Ward). 45 beds. Major Smith, Lt. W. D. Reid, M. R. C., U S A., Lt. G. H. Dorsey, M. C., U. S. A.

Workshops—Lt. H. H. Dignan, M. C., U. S. A.

Prince of Wales Hospital—50 beds, Mondays 10-12 (Limbless patients). Col. J. Lynn Thomas, Major Smith, Mr. J. O. D. Wade.

Clyne House—Major Smith. 40 beds. Officers Hospital. Mr. Wade.

Penarth V. A. D.—60 beds. Fridays 2-3:30. Capt. Orr, Lt. Braddock.

Samuel House—40 beds. Fridays 2-3:30. Lt. Davis, Capt. Orr.

Llandaff Lodge—50 beds. Fridays 3:30-5. Capt. Orr, Lt. Davis.

St. Pierre—48 beds. Tuesdays 2-3. Capt. Orr, Lt. Braddock.

Lt. Hall had been transferred to Edinburgh a short time before.

Private J. Cummings, Corporal Haddon and Private Edwards, clerks in the Examining Room.

An interesting feature of our Examining Room, was the card index. It was a new feature of the work at this institution. A sample card is submitted to illustrate how it worked.

Name—Litchfield, A.
Rank, Pte. Regt., No. 14336.
Unit, 1st Coldstream Guards.
Age, 24.
Ward, M. 1.
Admitted, 28-3-17.
Diagnosis (in detail) G. S. W. I. leg. Back. Fract. R. Leg. (No. IX. 4).

X-ray No. 2534. 2930.
Time in previous Hospitals. Six months.
Discharged from W. M. W. H. ....
To ....

REVERSE.

History: Wounded Sept. 15th, 1916 in France. Bullet went through a point above patella and came out inner side of knee joint. Knee joint stiff, foot in position of varus. Short 2¼ inches. Skiagram shows fracture of lower end of femur. 19-4-17. Operation. Inner sinus enlarged. Sequestrum removed. Full drainage established. Previous treatment. Drainage, dressings, etc.

Treatment here. 19-4-17. Inner sinus enlarged. Sequestrum removed. Bone scraped. Full drainage established. 18-7-17. Not yet healed. Sinus 3-inch. Hot fomentations. 3-9-17.

Examination Board: No attempts at extension. Through and through drainage. Sequestrotomy.

Arthrodesis of second toe and tenotomy by Major Smith, 22-9-17. Operation of femur, also Sequestrotomy. 19-11-17. Wounds healing satisfactorily. Latest X-ray shows signs of bony union in good position. Shortening 1½ inches. Thomas splint with extension. 1-12-17. Erysipelas. To Ely Isolation Hospital. 24-12-17. Readmitted from Ely Hospital. 5-1-18. To get up. To have caliper splint and S. W. C. (Soldiers Wounded Convalescent) Boots.

Welsh Met War Hosp. Staff June 1918-

In the examining room decisions were also arrived at as to operation; what kind and by whom to be done. Prescriptions were written for the gymnasium, electrical massage department or splint shop. Also transfers were arranged here, from the main hospital to the auxiliary or back to the main hospital or special treatment were required. All transfers had to be arranged through the officer in charge of the Orthopedic Department and the registrar.

One of the features of the work during the fall and winter of 1917-18 was the staff meeting, held three times a week. A specimen weekly program was as follows:

WELSH METROPOLITAN WAR HOSPITAL ORTHOPAEDIC DEPARTMENT STAFF MEETINGS.

Monday, Nov. 19th, 1917, 12:30 P. M. "The Prevention and Correction of Deformities of the Hip and Thigh." Capt. Orr.

Wednesday, Nov. 21st, 6-7 P. M. "Demonstration and Discussion of the Uses of Electricity in Diagnosis and Treatment." Lieut. Bassett Jones.

Friday, Nov. 23rd, 12:30 P. M. "Amputations and the Application of Artificial Limbs." Major Smith.

Certain other features of the work in Cardiff as it developed and the activities of the other members of the Goldthwait unit will be described in the next chapter.

(To be Continued).

THREE HYSTERECTOMIES.*

W. H. Betz, M. D., Omaha.

In this day of group studies with the romance of statistics and percentages to distract and delight the scientific soul of the surgeon, one seems impelled to apologize for presenting a few routine cases. However, my own viewpoint is the only one I am authority on, and even here I may be mistaken, so often the incidents of seeming importance lose all value with a little time. Standing out in every series are cases which invite special study, with illuminative indications which make surgery an art. In citing these three little histories, the only purpose served will be the reillustration of well-known details from the table side, plus my own interpretations.

Case No. 1.—Mrs. B., age 34, heptipara, well preserved. Weight 137 pounds, usual weight 160 pounds. Had been operated upon twelve years before for removal of the appendix and ventrosuspension; also varicotomy, both limbs, two years previously, performed by the essayist. Began flowing, and after four months almost continuous hemorrhage, she submitted to curettage. The scrapings being lost on the way to the laboratory, no definite information was had, but the result seemed satisfactory for three months, when the hemorrhage reappeared and continued for a month, at which time some loss of weight and more pain was being experienced. I recommended hysterectomy. The cervix appeared normal and no mass in the fundus was palpable. The fixation from a high Gillian suspension discouraged me from the vaginal route. Entering the abdomen, I found it necessary to sever round ligaments and other adhesions before proceeding to ordinary amputation. Cutting across the cervical canal, I noted a seeming erosion of the mucosa, so wedged out the remaining musculature of the cervix with the canal into the vagina. The recovery was uneventful, patient going home in ten days. Massive doses of the filtered ray were given for a time. Now two years after she is in normal health.

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*Read before the Elkhorn Valley Medical Society, January 13, 1921.

Histological Examination: Mucosa in state of proliferation. The glands are swollen and in close proximity to each other. The growth of the glands is irregular and in places they appear to invade the submucosa. The lining of the glands is made up of several layers of columnar cells. The lumen of some of the glands are filled up with cells.

Diagnosis: Malignant Adenoma.

Case No. 2.—Mrs. M., not very anemic; age 31; weight 145 pounds; height, 5 feet 7 inches; bipara. Referred by Dr. Avery. Had had pelvic disturbance for eight years, principally leucorrhea, and later a growth or irritative eversion of the anterior lip of the cervix. At first interview, I removed a not-at-all suspicious looking bit of the papilloma from the cervix with an ordinary adenoid punch (which, by the way, is very convenient). Suggested operation, which was deferred. First report from the laboratory, benign. However, the next day Dr. Wohl called me up, reporting that on further examination of the slide, he was about to send me his written report of malignancy, which was as follows: "A proliferation of the glandular structures. The lumina of some of the glands are filled up with epithelial cells. In places the glands are close together and exhibit a tendency towards irregular growth. The stroma is made up of connective tissue, and is the seat of round cells. Diagnosis: Glandular endometritis on the border line of malignancy." I then urged hysterectomy, which was accepted. Proceeding by the abdominal route, the usual complete course was followed and incidentally an unusually careful and unhurried haemostasis was carried out. On leaving the table, patient became practically pulseless and evidence of a severe hemorrhage appeared. There was no hemorrhage demonstrable at the wound site or adjacent thereto. Within an hour, a large black hemetemesis occurred and epigastric pain was noted. Strenuous efforts to retain patient's life were required. The hemetemesis was repeated on several days, and, of course, there was a profound anemia and protracted convalescence. (I did not transfuse, only because I could not quickly secure a professional donor in the acute stage). I do not recall getting so much of a surprise in years. Considerable broken down blood appeared in the stool for a week and epigastric pain frequently required narcotic restraint. The patient made an ultimate satisfactory recovery. I will say that there was no pinching or traumatism of any of the viscera during the operation and that, of necessity, after control of the symptoms, no opportunity for exploratory laparotomy occurred. The vaginal wound healed without event, quickly in fact. The patient was not a bleeder, was free of lues and gives no indication of intestinal or gastric ulcer now. Was there one at the time, as I thought, or not?

Case No. 3—Mrs. W., age 31; height, 5 feet 4 inches; usual weight, 105 pounds; weight for some months before operation, 126 pounds; on leaving the hospital, 114 pounds. A quadripara. Nine months previous had delivery of dead foetus at term. It was swollen and edematous. Since that time a continual wastage of water occurred, not relieved by medical measures. Finally she was unable to be about at all, remaining in bed for the greater part of the day. On examination, I found a bleeding mass filling the vagina and sent her to the hospital. Her anemia was profound and she was not a good risk even at her age. With heated soldering irons in readiness, I prepared to attack the cervical growth. However, I did not use the cautery, as I found that I could get around the edges of the growth with a little effort, so I proceeded to amputate as high in the cervix as possible. This wound I closed tightly and opened the anterior vaginal vault. I was able to do a very satisfactory hysterectomy. With the exception of the first step practically no hemorrhage occurred and no contamination of clean areas in the wound was necessary. The anemia of this patient was marked and persistent, but not contributed to by the operation, hence I did not resort to other than dietetic relief. Immediate recovery followed with the exception of chills and extreme hyperpyrexia on the tenth day. This was suppressed with aspirin and recurred some three weeks later, for a day and again disappeared after taking aspirin. Both instances being followed by profuse sweating. The wound site healed without complication and I was unable to satisfy myself of the location of the apparent sapremia. The patient is taking massive doses of X-ray and is getting about and feeling quite well. She is still somewhat anemic, but so much improved that no further medication is required. Laboratory report on specimen was as follows: "An increase in the uterine glands. The glands are elongated and penetrate into the muscle coat. They show an irregular growth. The blood vessels are thickened. Diagnosis: Adeno-carcinoma."

The future of these three cases will, without a doubt, be under my observation, and the result will be my lesson. If recovery becomes permanent, as expected, what, if any, conclusion will be warranted? That cancer if attacked in time is vulnerable? At what time is cancer vulnerable? The thought of a precancerous or borderline state as a definition seems untenable. In the experience of most operators, cases of undoubted malignancy have remained well so many years after operation, that they should not go unnoticed. In this article, while a general statement of malignancy is precluded, the fact that the state of activity in malignancy is directly related to its successful attack, either temporarily or permanently, may be assumed. If such a state can be secured by the agency of radium or X-ray, as has been suggested, a determination of the limits of such a state, will be of immense value. It has been demonstrated that the improvement or arrest by ray ceases after a time with serious exacerbations. If malignancy itself does have either preactive or resting stages, normal or artificial, during which its vulnerability to attack is actual, then the limits or indication of such a state are to be sought in the cases where favorable results have occurred.

When the study of a considerable number of operations for malignancy is considered, a pessimistic atmosphere is created to which we all yield, perhaps too readily.

Personally, I must plead guilty to an abiding interest in the cases which get well for a time, or stay well. Especially do I want to get an exact pathologic report, not so much to question the diagnosis, as to determine a case in point, and to acquire data for the construction of any theory calculated to indicate a successful avenue of operative procedure, and with a little better reason than mere chance.

In the first of the cases noted, an exceptionally early stage of malignancy existed. In the second, the tissue changes were proceeding very slowly. In the third, while the neoplasm was active enough, the range of development was evidently circumscribed. In this case the increase in weight in the few months preceeding was due to quite favorable conditions in her life at the time, which would mean nothing in the symptomatology. The degree of physical robustness is no absolute contraindication in either lues, tuberculosis or cancer. At any rate, I expect favorable results in these three cases.

The three cases cited represent the typical transition stages resulting from chronic irritation giving rise to proliferative changes and true cancer formation. Miscellaneous life of both plant and animal nature may change its character according to external stimuli. Thus we know that microbes may be changed from one into another by change of oxygen tension, the controlling power or, as Wilson puts it, the dynamic forces of every cell are the centrosomes and chromosomes. With division and multiplication of cells the centrosomes are retained, hence the lawful and regular growth of simple inflammatory conditions; however, if the exciting causes persist, the cells tend to become more atypical and more active, and next in the division of cells the chromosomes and centrosomes fail to be carried, the controlling brain of the cell is lost, and the cells are in a state where they are no longer coordinated and correlated with the neighboring tissue, lawlessness ensues or true carcinoma is formed.

It becomes, therefore, apparent that it is difficult to tell by hard and fast rules at times where benignancy ends and malignancy begins.

In conclusion, if any deduction is warranted from the fragmentary suggestions of these cases, it may be assumed—first that the surgical object will be best attained when the growth is very limited in activity, or the field circumscribed; second, that approximate conditions may be sought through ray activity; third, that the ray is not a bad martial law to invoke after the riot; fourth, those cases which recover are worthy of research.

THE 53RD ANNUAL MEETING OF THE NEBRASKA STATE MEDICAL ASSOCIATION.

Lincoln, Neb., May 9-12, 1921.

Opening Exercises.

The Fifty-third annual convention of the Nebraska State Medical Association met in the Lincoln Hotel, Lincoln, Nebraska, Tuesday, May 10th, and was called to order by the president, Dr. Moore. Rev. H. H. Harmon, of Lincoln, was called upon to pronounce the invocation.

Invocation.

Our loving God and Father, we thank Thee for life, for home.

We do thank Thee for our country and the great privilege we have in this land of ours. We pray there may be an ever-increasing appreciation of the land Thou hast given us, wherein we have been born, and the great heritage we have from our fathers. We know we cannot understand or appreciate all the blessings that are ours.

As fellow travelers in this life who would make the world better, we would come to such appreciation we might show the gratitude we have for the favors Thou dost give us, for those who laid the foundations for this great land of ours upon which we are continuing to build.

May we be humble and helpful in service.

We are glad these men of a comradery that grows out of the profession of which they are a part may come together for interchange of thought. May these days be profitable to them. May they be days of helpfulness when they shall go back to their fields of labor.

Oh, Thou who art the Great Physician and Healer, and dost give us the sunshine and the flowers and the songs of birds, we thank Thee Thou hast invited into partnership with Thee those who can help to alleviate the ills of their fellows who are in sickness and sorrow.

God grant Thy blessing now and ever upon those of the healing art, and bless the means by which they come to develop and grow and to think Thy thoughts after Thee by which mankind shall be benefited because of the ministry they bring.

Thy blessing we seek upon all these. May they be days of profit while they are here.

Wilt Thou bless the loved ones in the homes from which they have come.

May this Capital City that belongs to us all be a place in which there shall be fellowship that shall enrich and gladden life, and make our services better to the world in which we live.

And Thy name shall be praised. Amen.

Address of Welcome.

Dr. B. F. Bailey, Lincoln, Neb.

Mr. President and Members of the Nebraska State Medical Association: I consider it an unusual honor again to be asked by our County Society to extend to you a welcome.

As you know, people who are born in New England become so very fond of it, it is exceedingly difficult to wean them from it. It is very difficult for them to find it in their hearts to extend as warm a welcome to the people of every state as it would be, perhaps, to the people down there.

But I am rather becoming weaned from New England, and in proportion as I do so, I become more attached to Nebraska. Last summer when I was down on the coast, there was an affair that gave me a great deal of grief. As a result of it, I have been somewhat weaned from New England.

There was a drowning accident. A Jewish lady had gone in bathing and been drowned. There was a great deal of commotion, and a friend wired to the husband for directions. He wired back: "Leave nothing undone to find Rebecca's body."

The next day they found it. Then the friend wired the husband: "We have found Rebecca's body. There were twelve lobsters attached. Wire instructions."

The husband wired back: "Ship the lobsters and set her again."

I can assure you when they come to that with their bait, it destroys my allegiance and loyalty.

Another thing that has given me a closer attachment to the west is the fact I find in the east we are misunderstood. When they look at a westerner, they can't judge him for what he is. Two years ago, between the time of his election and inauguration, Governor McKelvie went to Chicago to the Athletic Club. It was at the time the country was becoming dry. They were having a pretty good time. Some were pretty well lighted up. One man came up and said, "Governor, I want to introduce you to Jack. He is a great fellow! He's a thoroughbred! He's a little lighted up today, I will admit." Then, turning to his friend, he said, "Jack, this is the next Governor of Nebraska."

Jack looked Governor McKelvie over from top to toe, and then said, "Hic! I am — Hic! — pretty d——d drunk, but not so drunk as that!"

We know that was not fair judgment. We know the Governor has been a good friend of the medical men of Nebraska.

A few months ago I stood looking at the Lincoln Monument in Washington, and was inspired by the tribute of the people of America to the man who did his work of worry and trouble in that city—the man who made good and bore up under that terrific pressure because of his absolute faith in the judgment and sincerity and fairness of the American people.

A few days ago I stood at the Lincoln Memorial monument where Lincoln is buried in Springfield. I spent a long time in the Memorial Hall. I became acquainted with the custodian. In that hallowed place, my heart swelled with pride that we have come during this year to make more and more of the fact that Lincoln, Nebraska, is the Memorial City of this country, builded in honor of Lincoln. It was named for him in his memory. It has been builded as other cities, and we have only just recently come to realize the responsibility upon us to the people of America and the world to build a city worthy of a memorial to Lincoln. We have been trying to do it recently. The people of the State, through their representatives, have given to us an appropriation that will build for us a capitol in this State that is said not only to be second to none in the country, but to be a piece of architecture that will attract people from all over the world.

The city itself has recently appropriated two million dollars to make the school system of this city in keeping with the demands of the people of the city and the people of the State. It has raised the salaries of its teachers until they are in keeping with the salaries of other cities and educational centers.

Realizing the gratitude we should feel to the people for bringing to us this wonderful capitol, the Chamber of Commerce has planned for a civic center, for parks and boulevards; and they are not only planning, but actually doing, to make this a very beautiful city.

Lincoln gave his life that this country should be one and undivided, and that a race should be free. But we realize the slaves of the olden time were not the only slaves; but the worst slave is the slave who is shackled by disease, and so it rests upon our shoulders to realize the responsibility that is ours—the responsibility we must undertake to make this State the best state—the State freest from infectious diseases—the State with the strongest medical profession in the Union.

Gentlemen, I do not tell you all these things about Lincoln because I wish to boast to you what it is, but because I feel that when the boys come home who have gone to other lands for their work—other places of promise—that it is only natural and desired by them, that when they come home, those who have remained on the old homestead should tell them something of the work that is being done and the welcome awaiting them.

Gentlemen, this city of Lincoln is your city, not ours. We are not welcoming you alone to Lincoln, but simply welcoming you home. The people of Lincoln have come to feel you located the city; you built its public buildings and erected its schools, and send your representatives here, and it is your home and your city. And so we simply welcome you back and tell you the house is open, the key is yours, and we will always expect you to come home often.

First Session of the House of Delegates.

Monday Evening, May 9th, 1921.

The first session of the House of Delegates met in the Lincoln Hotel, Monday evening, May 9th, and was called to order by President M. S. Moore at 7:40.

Roll call of delegates by the secretary showed 38 members present. That being a quorum, the president declared the House of Delegates convened.

Upon motions duly seconded and carried, Dr. G. I. Sellon was seated as a delegate from Custer County and Dr. J. F. Prendergast from Pawnee County.

Dr. Bailey read a telegram from Hal C. Smith telling of the death of the daughter of Dr. N. T. Johnston of Upland, and moved the secretary be instructed to send to Dr. Johnston a message of condolence. The motion was seconded and carried by a rising vote.

There being no objection, the Chair declared the reading of the minutes of the previous meeting would be dispensed.

Election of President Pro Tem.

It was moved the election of president pro tem be by acclamation. Motion was seconded and carried.

Dr. Hildreth nominated Dr. W. S. Evans of Columbus, who received the unanimous vote of the Delegates.

Reports.

The secretary-treasurer stated that inasmuch as his report was published in the Journal, he did not deem it necessary to make another report at this meeting.

In regard to the report of the Council, Dr. von Mansfelde moved the recommendations only be given. The motion was seconded and carried. Dr. A. P. Overgaard then read the various recommendations and moved that they be adopted. The motion was seconded and carried.

The following reports were then given and referred to the Council for action:

The report of the Committee on Public Policy and Legislation was given by Dr. Bailey, chairman.

Dr. F. A. Long, chairman of the Committee on Journal and Publication, gave a report of the finances of the Nebraska State Medical Journal.

Dr. I. H. Dillon read the report of the committee on Care and Prevention of Contagious Diseases.

The report of the Committee on Medico-Legal Defense was given by Dr. von Mansfelde, who emphasized the necessity of care in discussing the cases of other physicians, lest they be hailed into court. He cited the instance of a so-called Indian princess who had been practicing medicine without a license. Through the activity of the Committee and its attorney, she was fined $100.00 and warned not to repeat the offense. Dr. von Mansfelde requested the members to report any cases of fee-splitting that came to their knowledge, and promised prompt action of the committee in combating the evil.

The report of the Campaign Committee, Dr. Hohlen, chairman, was read by the secretary in the absence of the former.

The report of the Council on Medical Education was read by Secretary Adams in the absence of the chairman, Dr. J. S. Welch.

The report of the Committee on the Study of Cancer was presented by Dr. D. T. Quigley.

Dr. Dillon read the report of the Committee to confer with the State Teachers' Association in regard to matters of health education.

It was moved by Dr. F. Tornholm that a special vote of thanks and appreciation be extended to the standing and special committees for the splendid work they have done as shown in their reports just read. The motion was seconded and carried by a rising vote.

The report of the Committee on Memorials was presented by Dr. Overgaard, the audience standing during its reading.

Dr. Overgaard then moved a page be set aside in the official Journal of the Nebraska State Medical Association as a memorial for Dr. Aikin, its secretary, and an additional page for the other names as read, stating the date of death. The motion was seconded, and carried by rising vote.

Communications.

The following communications were read by the secretary:

The Second International Eugenic Congress.

The National Anaesthesia Research Society.

These communications were referred to the Council for action.

An interesting review of the Medical Educational Congress was given by Dr. Dunn as a delegate.

It was moved by Dr. E. W. Rowe that this report be read before the general session in order to give it wider hearing. The motion was seconded and carried.

The Chair declared a recess of 15 minutes preceding the election of the Committee on Nominations.

Recess.

The following members were then nominated in their respective districts:

District No. 1—Dr. A. A. Johnson, Omaha.
District No. 2—Dr. B. F. Bailey, Lincoln.
District No. 3—Dr. C. L. Hustead, Falls City.
District No. 4—Dr. J. P. Jensen, Plainview.
District No. 5—Dr. S. A. Preston, Fremont.
District No. 6—Dr. J. S. Bell, York.
District No. 7—Dr. Porter F. Dodson, Wilber.
District No. 8—Dr. J. P. Gilligan, O'Neill.
District No. 9—Dr. G. I. Sellon, Broken Bow.
District No. 10—Dr. F. A. Wells, Axtell.
District No. 11.
District No. 12.

Dr. Morris Nielsen of Blair suggested the vacancies in Districts 11 and 12 be filled at a later meeting when members from those districts might be present.

Upon motion, the House of Delegates was declared adjourned until 8 o'clock Tuesday morning.

Second Session of the House of Delegates.

Tuesday, May 10th, 1921.

The second session of the House of Delegates met in the Lincoln Hotel, Tuesday morning, and was called to order by president pro tem, Dr. W. S. Evans at 8 o'clock.

Thirty members responded to roll call.

The minutes of the previous meeting were read by Secretary Adams, and there being no corrections, they stood approved.

Dr. von Mansfelde moved that the report of the Board of Councilors meeting in January be adopted, as only the recommendations of the report had been adopted at the previous meeting. The motion was seconded and carried.

The minutes of the Board of Councilors meeting were read by the secretary, Dr. A. P. Overgaard.

A motion was made by Dr. von Mansfelde that the recommendations referred to the House by the Council be adopted. The motion was seconded and carried.

After some announcements by the president and Dr. Wells of the Nominating Committee, Dr. von Mansfelde suggested that the secretary be instructed to appear before the general session and announce that the Nominating Committee would meet at 4:00 P. M. to receive nominations.

The meeting was then declared adjourned.

Third Session of the House of Delegates.

Wednesday, May 11, 1921.

The third session of the House of Delegates met in the Lincoln Hotel, Wednesday morning, and was called to order by Chairman Evans at 8 o'clock.

Thirty-two members responded to roll call.

The minutes of the previous meeting were read by Secretary Adams, and with no corrections stood approved.

Dr. G. I. Sellon presented the regrets of Dr. Mullins on account of his inability to attend this meeting.

After some announcements, the meeting was adjourned until Thursday morning.

Fourth Session of the House of Delegates.

Thursday, May 12, 1921.

The fourth session of the House of Delegates met in the Lincoln Hotel, Thursday morning, May 12, 1921. The meeting was called to order by President Moore at 8 o'clock.

Forty-two responded to roll call.

Secretary Adams read the minutes of the previous meeting, which, with no corrections stood approved.

The report of the Nominating Committee was given by Dr. P. F. Dodson, as follows:

For President-elect: S. F. Sanders, Holdrege; H. M. Hepperlen, Beatrice; B. B. Davis, Omaha.

Vice-Presidents: Porter F. Dodson, Wilber; P. R. Howard, North Bend.

Secretary-Treasurer: R. B. Adams, Lincoln.

Corresponding Sec. and Librarian: W. P. Wherry, Omaha.

Delegate to A. M. A.: A. D. Dunn, Omaha.

Alternate: W. R. Neumarker, Columbus.

Delegate to Council on Medical Education of the A. M. A.: LeRoy Crummer, Omaha.

Councilors: First District, A. P. Overgaard, Omaha; Second District, H. J. Lehnhoff, Lincoln; Third District, R. W. Fouts, Falls City; Fourth District, A. E. Cook, Randolph.

Member of Committee on Journal and Publication: F. A. Long, Madison.

The chair then gave opportunity for nominations from the floor. Dr. J. H. Vance submitted the name of Dr. E. T. Manning as a nominee for Secretary-treasurer.

President Moore named Drs. F. A. Wells, J. P. Lord and R. D. Bryson as tellers, and ordered the House to proceed to election.

The election of president-elect by secret ballot, showed a total of 41 votes cast. Of these B. B. Davis having received the majority was declared president-elect.

A motion was made, seconded and carried that the secretary be instructed to cast the unanimous vote of the House electing Porter F. Dodson and P. R. Howard, vice-presidents. The vote was cast as ordered.

The election of secretary-treasurer by secret ballot showed the following results: Dr. E. T. Manning, 22 votes; Dr. R. B. Adams, 20 votes. The chair declared Dr. Manning to be secretary-treasurer.

Upon motions, duly seconded and carried, the secretary was instructed to cast the unanimous vote of the House electing the following:

Corresponding Secretary and Librarian, W. P. Wherry.

Delegate to the A. M. A., A. D. Dunn.

Alternate, W. R. Neumarker.

Delegate to Council on Medical Education of the A. M. A., LeRoy Crummer.

Councilors: First District, A. P. Overgaard; Second District, H. J. Lehnhoff; Third District, R. W. Fouts; Fourth District, A. E. Cook.

Member of Committee on Journal and Publication, F. A. Long.

The votes were cast as ordered.

Dr. Bailey moved that Dr. J. P. Gilligan be elected alternate to Dr. W. O. Bridges, who succeeded Dr. Aikin as delegate to the A. M. A. The motion was seconded by Dr. Fouts and carried.

A communication was then read from the committee to which was referred the address of President Moore. Dr. Bailey moved that the report of the committee be adopted. Motion seconded by Dr. Bryson and carried.

Upon being questioned as to when the newly elected secretary-treasurer would assume office, the Chair declared that he would begin his duties at the close of the meeting and remain in office until the unexpired term of the former secretary, Dr. Aikin, as the president's appointment of Dr. Aikin's successor would only be up until the time a secretary could be elected by the House of Delegates. After being informed that Dr. Aikin's term expired Dec. 31, 1921, the president announced that Dr. Manning would be secretary up to that time and it would be necessary to elect a secretary for three years beginning Jan. 1, 1922.

Dr. Banister then moved that Dr. Manning's election be confirmed for the full term.

Dr. Gilligan made a substitute motion that the House proceed to ballot. Motion seconded and carried.

The president then called for nominations from the floor and the names of Drs. Adams and Manning were submitted.

A motion was made, seconded and carried, that the members of the House who had entered the room after roll call give their names to the Secretary. Four members responded.

The election by secret ballot showed a total of 46 votes cast. Of these Dr. Adams having received 25, was declared elected Secretary-treasurer for three years beginning Jan. 1, 1922.

The minutes of the meeting of the Board of Councilors were read by Dr. Adams.

Dr. Tyler moved that the recommendations of the Board of Councilors be adopted. This motion was seconded by Dr. Bryson.

Dr. Fouts moved that the recommendations be amended and the appropriation made to the Campaign Committee be made to read Campaign and Legislative Committees. This motion was seconded by Dr. Tyler and the recommendations of the Council as amended were adopted.

A resolution endorsing the work of the State Compensation Commissioner was read by Dr. Adams. Dr. Bailey made a motion that the president appoint a committee to take the recommendation under consideration and make their report to the next meeting of the Council and that they be empowered to act upon same.

Dr. Gilligan moved that it be laid upon the table indefinitely. This motion was seconded and carried.

After extended discussion, Dr. Orr moved that a committee of three be appointed by the chair to report at the next meeting of the Council. This motion was seconded by Dr. Tyler and carried.

The chair appointed Drs. Orr, Gilligan and McConaughy to serve on said committee.

Motion made, seconded and carried that a vote of thanks be extended to the Lancaster County Medical Society and the Lincoln Hotel for the splendid entertainment given at this meeting.

A letter from the Chamber of Commerce of Omaha, inviting the Association to hold their 1922 meeting at Omaha, was read by the Secretary. Dr. McConaughy moved that this invitation be accepted. Motion seconded and carried.

A motion was made that a vote of thanks be extended to the officers who conducted this session, especially to the president. Motion seconded and carried. The House then adjourned.

First Meeting of the Board of Councilors

Monday Evening, May 9, 1921.

The Board of Councilors met in the Lincoln Hotel, Monday evening, May 9th, immediately following the adjournment of the House of Delegates. The following members were present: Drs. Morris Nielsen, A. P. Overgaard, R. W. Fouts, R. D. Bryson, Frank Tornholm, H. E. Potter, H. J. Lehnhoff and A. E. Cook. President Nielsen presided.

Dr. Fouts moved that the report of the Committee on Public Policy and Legislation be referred to the House of Delegates with the recommendation that it be adopted with thanks.

The motion was seconded by Dr. Cook and carried.

Dr. Cook moved that the report of the Committee on Journal and Publication be referred to the House of Delegates with the recommendation of the Council that $1.50 per member be appropriated.

The motion was seconded and carried.

Dr. Tornholm moved that the report of the Committee on Care and Prevention of Contagious Disease be referred to the House of Delegates with the recommendation that it be adopted with thanks and published in the Journal.

The motion was seconded and carried.

A motion was made by Dr. Potter that the report of the Campaign Committee be referred to the House with the recommendation that it be adopted with a vote of thanks and that the activities of the Campaign Committee be commended.

This motion was seconded by Dr. Cook and carried.

Dr. Lehnhoff moved that the report of the Committee on Medical Education and Hospital Standardization be referred to the House of Delegates with the recommendation that it be adopted.

The motion was seconded and carried.

Dr. Tornholm moved that the report of the Medico-Legal Defense Committee be referred to the House with the recommendation that it be adopted.

The motion was seconded by Dr. Fouts and carried.

A motion was made by Dr. Potter that the report of the Program Committee be referred to the House of Delegates with the recommendation that it be adopted.

Dr. Bryson seconded the motion, which was carried.

Dr. Nielsen moved that the report of the Committee to confer with a committee of the Nebraska Teacher's Association to promote health education, be referred to the House with the recommendation that it be adopted and the Committee reappointed.

The motion was seconded by Dr. Cook and carried.

Dr. Tornholm moved that the report of the Cancer Committee be referred to the House with the recommendation that it be adopted.

Motion seconded by Dr. Lehnhoff and carried.

Dr. Fouts moved that the secretary be instructed to send a telegram of condolence to Dr. Johnston on account of the death of his daughter and that a committee be appointed to draw up resolutions of respect.

This motion was seconded by Dr. Potter and carried.

Dr. Nielsen appointed Drs. Fouts and Bryson to serve on this committee.

The meeting then adjourned.

Second Session of the Board of Councilors.

Tuesday, May 10, 1921.

The second session of the Board of Councilors was held in the Lincoln Hotel, Tuesday morning at 9 o'clock.

The meeting was called to order by Dr. H. E. Potter. The following members were present: Drs. Potter, Overgaard, Fouts, Tornholm, Cook, Lehnhoff, Nielsen and J. P. Gilligan in place of W. J. Douglas.

Drs. Fouts and Bryson presented their resolution of respect to Dr. Johnston. A motion was made by Dr. Lehnhoff that it be adopted. The motion was seconded and carried.

Dr. Palmer Findley appeared before the Council, asking that the Nebraska State Medical Association support the work of the American Society for the Control of Cancer in promoting cancer propaganda to the laity over the state. He also requested that each individual Councilor cooperate in organizing his district to observe a Cancer week in September.

A motion was made by Dr. Fouts that the Council get back of Dr. Findley and support him in this work. Dr. Bryson seconded the motion, which carried. After some discussion it was decided to make further plans for this campaign at a later meeting.

The meeting then adjourned.

Third Session of the Board of Councilors.

Wednesday, May 11, 1921.

The third session of the Board of Councilors met in the Lincoln Hotel, Wednesday morning at 9 o'clock. The meeting was called to order by President Nielsen.

The following members were present: Drs. Nielsen, Overgaard, Bryson, Fouts, Potter, Tornholm, Cook and Lehnhoff.

The minutes of the previous meeting were read by the secretary, and approved.

A motion was made by Dr. Fouts that the Council appropriate $360.00 to defray the expenses of the Councilor District Society meetings in the different districts, this to cover printing, postage and hall rent, no district being authorized to expend more than $30.00 in each year. The motion was seconded by Dr. Lehnhoff and carried.

It was moved by Dr. Potter, seconded by Dr. Bryson and carried, that the budget for 1922 be made up as follows and that it be submitted to the House of Delegates with the recommendation that it be adopted:

State Medical Journal, per member	$ 1.50
Campaign Committee	500.00
Secretary-Treasurer's office	600.00
Salary of Secretary-Treasurer	600.00
Librarian's Expense	25.00
Salary of Chairman of Medico-Legal Defense Committee	300.00
Expense of Chairman of Medico-Legal Defense Committee	200.00
Councilor District Society meetings	360.00
Expense of Councilors	154.79
Official Stenographer—1921 meeting	150.00

The meeting then adjourned.

House of Delegates Roll Call.

County	Delegate and Alternate	Meetings			
		1	2	3	4
Adams	W. S. Fast			1	
Boone	J. W. B. Smith			1	1
Box Butte	C. E. Slagle				1
Buffalo	A. D. Cameron				
Burt	H. W. Benson				
Butler	O. E. Longacre	1	1		1
Cass	J. S. Deering				
	M. W. Thomas				
Cedar-Dakota-Dixon					
Thurston-Wayne					
Chase-Dundy-Hayes-Hitchcock					
Clay	G. H. Bentz			1	1
Cuming	T. D. Thompson				
	H. S. Summers				
Custer	G. I. Sellon			1	
Dawson	E. C. Stevenson				
	Wm. J. Birkofer				
Dodge	C. G. Moore				1
	S. A. Preston	1	1	1	
Fillmore	M. H. Deffenbaugh				
	K. F. E. Wegener				
Franklin	Will Dugan				
	H. C. Smith				
Furnas					
Gage	C. S. Curry	1	1		
	C. G. Baird				1
Hall	B. R. McGrath				
Hamilton	E. A. Steenberg				
	J. M. Woodard				
Harlan	R. H. Kerr			1	1
Holt	Jas. M. Tische				
	L. A. Carter				
Howard	Adolph H. Holm				
	F. S. Nicholson				
Jefferson	W. J. Hawes				
	G. A. Heath				
Johnson	H. Farrell				1
	J. M. Curtis			1	
Kearney	F. A. Wells	1	1	1	1
Knox					
Lancaster					

F. F. Teal	1	1	1	1
J. J. Hompes		1		1
B. F. Bailey	1	1		1
Lincoln				
Geo. B. Dent				
Harry A. Briggs				
Madison				
G. E. Charlton		1		
Merrick				
R. R. Douglas				
A. D. Brown				
Nance				
Homer Davis				
Nemaha				
E. M. Tyler				
B. F. Lorance				
Nuckolls				
W. H. Nelson				
Omaha-Douglas				
A. Sachs	1			1
A. F. Tyler	1	1		1
J. F. Langdon	1			1
A. A. Johnson	1	1	1	1
A. R. Knode	1			1
J. H. Vance	1		1	1
C. A. Roeder	1			1
Otoe				
S. S. Wilson				
George Ewh				
Pawnee				
J. F. Prendergast	1	1	1	1
Phelps				
J. L. Magill	1	1		
Pierce				
J. P. Jensen	1	1	1	1
Platte				
W. S. Evans	1	1	1	
Polk				
J. C. Malster			1	1
D. J. Smith				
Red Willow				
W. D. Mackechnie			1	
Richardson				
C. L. Hustead		1	1	1
Saline				
Porter F. Dodson	1		1	1
Saunders				
A. E. Stewart	1			
Scottsbluff				
F. B. Young				
Seward				
Wm. Sandusky				
B. Morrow				
Thayer				
E. A. Bowles	1	1		1
Valley				
Washington				
R. J. Murdock	1	1	1	1
Webster				
York				
J. S. Bell	1		1	
Officers				
President, M. S. Moore	1	1	1	1
Vice-President, E. A. Creighton				
Vice-President, W. L. Curtis				1
Secretary-Treasurer, R. B. Adams	1	1	1	1
Cor. Sec. and Libr., W. P. Wherry				
Councilors				
1st District, A. P. Overgaard	1	1		
2nd District, H. J. Lehnhoff	1			
3rd District, R. W. Fouts	1	1	1	1
4th District, A. E. Cook	1	1	1	1
5th District, Morris Nielsen	1			1
6th District, F. Tornholm	1	1	1	1
7th District, H. E. Potter	1	1	1	1
8th District, W. J. Douglas				
9th District, R. D. Bryson	1	1	1	1
10th District, N. T. Johnston				
11th District, H. E. Mantor				
12th District, A. J. Stewart				
Ex-Presidents				
Charles Inches				
M. L. Hildreth	1		1	1
A. S. von Mansfelde	1	1	1	
H. B. Lowry				
J. E. Summers				
F. D. Haldeman				
W. O. Bridges				
A. R. Mitchell				
Robt. McConaughy	1		1	1
H. M. McClanahan				
Wm. B. Eby				
A. B. Anderson				
A. F. Jonas				1
F. A. Long	1	1	1	1
Harold Gifford				
L. M. Shaw	1		1	
P. H. Salter				
J. P. Lord				1
A. D. Nesbit				
I. N. Pickett				
D. C. Bryant				
J. P. Gilligan	1	1		1
E. W. Rowe	1	1		1
W. F. Milroy				1
C. L. Mullins				
J. M. Banister				1
H. W. Orr	1	1	1	1

Report of the Committee on Journal and Publication.

The Journal Fund was audited at the end of the year 1920 and the report was published in the February 1921 issue of the Nebraska State Medical Journal.

An abstract of that report follows:

Balance January 1st, 1920	$1,034.85
Receipts from all sources during 1920	5,747.07
Total	$6,781.92
Total Disbursements 1920	5,314.57
Balance January 1st, 1921	$1,467.35

The income for the four months of 1921 is $2,994.27 and the expenses have been $1,635.23. The Journal Fund bank balance May 1st, 1921, is $2,826.39, which is $496.65 more than it was May 1st a year ago.

The death of Dr. J. M. Aikin, Managing Editor, occurred Nov. 18th, 1920. The chairman of the publication board at once took editorial charge of the Journal and has acted as directing editor to this time.

Miss Anne Erixon was appointed business manager early in December and has conducted the business affairs of the Journal to the entire satisfaction of the Committee on Journal and Publication.

An appropriation of $1.50 per member for the fiscal year 1922 is requested.

Respectfully submitted,
F. A. Long, Chairman.

Report of the Delegate to the Council on Medical Education.

Your delegate to the Council on Medical Education of the American Medical Association attended its meeting held in Chicago, March 7th and 8th, 1921. It has been the privilege of your delegate to sit as an observer at the sessions of the Council on Medical Education and of the Association of American Medical Colleges for the past ten years, and he has seen many things come to pass as the result of these sessions. A strong association of all the high grade medical schools has been formed, undergraduate medical education has been standardized and as a by product, over one-half of the medical schools in existence twenty years ago are defunct. To be sure, a stiff fight was put up for a time by the advocates of lower standards and "personal liberty in medical education" but the peace was Carthaginian. A curriculum which has both good and bad points has been established, the course of premedical education and the entrance requirements fixed, a minimum budget for medical colleges and the necessary number of full time teachers determined, in short, standards controlling undergraduate medical education have been put in force. At first the therapeutic effect was that of a weak moral uplift, but when joint meetings with the American Association of State Boards became habitual, the potency of the moral uplift became negligible in comparison with the drastic changes in the requirements adopted by the various State Boards. The requirements to be permitted to take the examination for licensure in most of the states now conform very closely to the minimum demands of the Council on Medical Education and of the American Association of Medical Colleges. In many of the states only the graduates of "accredited medical colleges" are permitted to take the examination for licensure.

Having so well cleaned up the quagmire of undergraduate medical education, the Council on Medical Education is now attacking the problems of hospital standardization, and postgraduate medical education, in order to justify the perpetuation of its machinery. With the work for which it was built largely completed, a machine that has functioned so well and accomplished so much of good as the Council on Medical Education must either deteriorate from disuse or find new "grists" to grind. Happily, there is enough work to be accomplished in hospital standardization and in elevating postgraduate medical education to keep the Council busy for some time. One can even visualize the activities of the Council on Medical Education diverted to problems almost as yet unborn—group medical practice, and civic and rural health centers. The whole trend of the times is toward centralization of control and policy and we might as well face the fact now that the control of medical practice will become centralized either through the State or through the activities of the medical profession itself, viz., the American Medical Association and its various subsidiary organizations of which the Council on Medical Education is one of the most important. The fear of State Medicine was one of the undercurrents of the meeting and it was repeatedly brought out in the discussions that only proper organization and standardization of medical work could kill that dragon. The Krankenkassen in Germany were cited as failures from the standpoint of those who were supposed to be benefited—the patients, and it was the opinion of all that State Medicine at our present stage of political development, would bring "dry rot" to the medical profession and kill initiative.

Postgraduate medical education was exhaustively discussed. Committees of investigation had been appointed the previous year and reports from these committees were read on the methods of training and the requisites for the specialties. The tenor of the reports on graduate teaching in internal medicine, pediatrics, nervous and mental diseases, dermatology and syphilology, surgery, orthopedic surgery, ophthalmology, otolaryngology and urology, permits one to deduce the following: (1) The sun is beginning to set for the selfconstituted specialist; (2) "the derelict in medicine" will no longer be permitted to annex a competency by acquiring the technique of tonsillectomy and turbinectomy; (3) the states will soon determine the basis on which medical men will be permitted to practice within their jurisdiction as specialists; the candidates will have to be graduates of accredited medical colleges; they will have to have had clinical training, the nature of which will be specified for the different specialties, and then they will have to spend a stated time in training for their respective specialties with material, equipment and supervision as specified. It is quite possible that the policing of this training will in some way come under the jurisdiction of the Universities and it was even suggested that M. S. and Ph. D. degrees be provided as trade marks.

Lastly came the Conference on Hospital Service. This conference, inaugurated under the auspices of the American Medical Association, aims at centralization of all the interstate hospital organizations and associations and will probably take charge of the work of hospital standardization launched by the American College of Surgeons. And it seems best that it should be so.

It appears that a campaign of publicity will soon be launched to teach the public what good medicine is and how it may be obtained. Prior to such a campaign the medical profession must have set its house in order and to this end it has worked for twenty years. It will soon be ready to invite the public in, show it what the profession stands for and solicit the public's cooperation in the solution of the manifold problems of personal and public health.

The Corollary. Organization of all medical activities is progressing rapidly. The Nebraska State Medical Association should have the strongest possible representation in the national organizations in order that it may assume its proper part in medical progress.

A. D Dunn.

Report of the Committee on Medical Education.

This is the third year of existence for your Committee on Medical Education and Hospital Standardization. The high standards of the two medical colleges of Nebraska leave little for this committee to do in the avenue of medical school education. We can but recommend the continued loyal support of the State Medical Association.

The work on standardization of hospitals has shown some progress among those hospitals desiring internes. No resurvey has been made this year because to date it has been impossible to get from the Council Department of the A. M. A. the necessary blanks and questionnaires. We learn through frequent correspondence that the previous hospital surveys have stimulated standardization activities everywhere; that an analysis of the reports from different states shows a marked difference in needs, and that the demand for internes much exceeds the supply.

In Nebraska the larger hospitals have shown some increase in interest in the standardization work. This is evidenced by better staff organization, better record keeping and filing, better laboratories, better training schools, etc.; but a detailed resurvey will be necessary to mark these changes with accuracy. The smaller hospitals are in need of encouragement. Their standards in some instances are relatively high under existing circumstances. In many they seem very low. No detailed study yet made seems to offer a solution for their needs.

We call your attention to efforts being made to further medical education by the presentation to the public of certain vital health problems. The public session on your program this year is commendable. Others have occurred in the state this year and should be encouraged. Laymen should be made to better understand the hospital standardization work and many other health problems. We recommend a continuation of the work under the direction of the Council of the American Medical Association.

J. S. Welch, Chairman.
A. D. Dunn.
Irving Cutter.

Report of Committee on Care and Prevention of Contagious Diseases.

We, your Committee on the Care and Prevention of Contagious Diseases, beg to submit the following report for the year 1920:

During this calendar year there were no changes made in the various state laws governing the prevention and control of contagious diseases and no material change made in the Rules and Regulations of the State Bureau of Health during the same.

A county health organization exists in every county in the state as well as in the incorporated cities, towns and villages. However, there are but two cities in the state in which there is an efficient full time health organization, namely, Omaha and Lincoln. In all of the other cities in the state and in all of the counties of the state the Boards of Health are on a part time basis which does not produce the most efficient results.

The following total number of cases have been reported of the various reportable diseases occurring in the state, also the total number of deaths from these various diseases:

Disease	Number Cases Reported	Deaths
Anthrax	1	1
Chickenpox	785	1
Diphtheria	909	113
Encephalitis lethargica	7	115
German measles	18	0
Influenza	22,887	803
Leprosy	1	0
Measles	3,779	56
Meningitis, Cerebrospinal	40	30
Mumps	300	0
Ophthalmia neontorum	1	0
Pneumonia	238	1,127
Poliomyelitis	13	3
Rabies	1	1
Scarlet fever	2,058	53
Septic sore throat	17	4
Smallpox	4,135	10
Tetanus	2	9
Trachoma	3	0
Tuberculosis	247	393
Typhoid fever	181	55
Whooping cough	538	224
	36,161	2,898

The number of communicable diseases reported, in comparison with the number of deaths from each, would indicate that the reporting of cases as required by law is not complete. We would urge upon all physicians the necessity of reporting all such cases to the proper health authorities. In the first place, this is an obligation required of them by the state which authorizes them to practice their profession. In the second place, it is a duty they owe to the public for its protection.

In order that the health authorities may carry out the necessary measures of prevention, it is necessary to know where the cases are. This they cannot do if cases are unreported. The physician stands in the first line of defense against the spread of infectious diseases. He it is, who usually has first hand knowledge of infectious cases, and if he does not report them he is violating the law and his duty to the public.

The greatest neglect occurs in the reporting of tuberculosis. This is evidenced by the fact that the number of deaths exceed the number of cases reported. In order to do effectual preventive work against this disease, it is also necessary to know the case. Many of them need supervision and the correction of conditions that may be giving rise to other cases.

Smallpox has been prevalent throughout the state during the past year. We urge that physicians make every effort in helping to educate the public in the importance of vaccination as the only preventive measure of value. There is much opposition on the part of many people to vaccination, which may be largely overcome by instruction on the part of physicians.

I. H. Dillon.
J. F. Edwards.

Report of the Committee on the Study of Cancer.

The Committee on Cancer has confined its efforts to the promoting of cancer meetings by medical men and the teaching of the laity, where possible, the things they should know in regard to cancer. We have worked with the Nebraska representative of the National Society for the Control of Cancer, Dr. Palmer Findley, in promoting meetings in the profession and among the laity.

We believe that every county medical society should hold at least one meeting every year at which the cancer question is made the whole program. Every county society has been notified by letter that a man from this committee would attend and speak on the cancer question. Six societies accepted and were addressed by men from this committee and the National Society.

A member of this committee has addressed lay meetings on several occasions and has presented the following points which we believe should be brought to the attention of the laity on every possible occasion:

1. That early cancer is a local disease.
2. That early cancer is a curable disease.
3. That certain conditions called precancerous exist and that the disease should be prevented whenever possible by attention to precancerous lesions.
4. That the patient should consult the family physician whenever a suspicious condition is discovered and take his advice in regard to the best course to pursue.
5. That cancer quacks, doctors who guarantee cures, and who use pastes, plasters, etc., are dangerous and the life of a curable case may be sacrificed by ill advised treatment or loss of time.

Your chairman acted as secretary in organizing a large meeting for the laity in the Omaha Auditorium in connection with the meeting of the American College of Surgeons. The meeting was entirely on cancer and was addressed by Dr. Francis Carter Wood of the Crocker Institute of New York.

In our addresses to the medical men we have insisted on the two main points necessary to bring about better cancer surgery:

1. That traumatism may cause recurrence and this traumatism may be supplied by the surgeon by rough handling in the operation or in the examination. Therefore, the greatest gentleness should be exercised by the medical man in dealing with cancer.
2. That cancer is transplantable in the same person and very great care should be exercised by the surgeon to see that cancer cells are not planted back in the operation field by contaminated fingers or instruments.

D. T. Quigley, Chairman.

Report of the Campaign Committee.

The chairman of the Campaign Committee begs to report that he feels that a step in the right direction has been taken in creating a Campaign Committee. The results obtained in the last Legislature will confirm this, although better results might have been obtained if all the county societies had cooperated.

The chairman of this committee has on three different occasions, written to each County Society asking them to elect a member to this Committee. The result was that 25 Counties were heard from. This is about 50 per cent efficiency. We should have 100 per cent.

The chairman has at all times endeavored to carry out the instructions of the Legislative Committee. In this he has been ably assisted by the members of this committee in the various counties. They have responded so quickly and thoroughly that it left an impression on the Legislature. My thanks for their hearty cooperation.

Respectfully submitted,
K. S. J. Hohlen.

Report of a Special Conference Committee With the Nebraska State Teachers' Association.

Under date of October 27th the writer received the following communication from Joseph M. Aikin, then secretary of the State Association.

"Dear Doctor Dillon:—

"After considerable delay we have arrived at the point where we can advise you of your appointment as chairman of the special committee authorized by the last meeting of our Nebraska State Medical Association as a conference committee with the Nebraska State Teachers' Association. Your associate members are: Drs. W. O. Colburn, Lincoln; J. M. Patton, Omaha; F. E. Way, Wahoo, and J. T. Steele, Hastings. Will you please communicate with them relative to the duties of your committee?"

On receipt of Dr. Aikin's letter a letter was addressed to each member of this committee asking that they meet at the Hotel Fontenelle in Omaha at 10 a. m., November 4th, as this date was during the time of the meeting of the State Teachers' Association. This committee failed to hold a formal meeting although its various members were in Omaha on the date specified. The reason for failure to hold a formal meeting was the fact that we met with no success in getting the State Teachers' Association to appoint a like Committee.

When the writer approached Mr. A. J. Stoddard, the president of the State Teachers' Association, relative to the matter he was referred to the chairman of their Resolutions Committee. Mr. Staley, the chairman of their Resolutions Committee, stated frankly that he was not in favor of such committee, that they were supporting the Child Welfare campaign in this state and that this Child Welfare campaign would care for all public health matters. If a committee from the State Teachers' Association was ever appointed we have failed to be advised of its existence or its personnel.

Respectfully submitted,
I. H. Dillon.

Report of the Committee to Comment on the President's Address.

Your committee to which was referred the address of President Moore begs leave to submit the following:

In the opinion of your committee the address is timely and the subject matter worthy the best thought of those who know, or should know the causes and the ultimate results of a world at war with itself because of improperly coordinated physical and mental reactions. The brief suggestions of Dr. Moore call for amplification and completer development of the subject to the end that we, the students of men, may advise wisely and offer measure for relief which can hardly come from other sources. In addition to the usual publication in our Journal the subject is worthy extended editorial discussion.

A. R. Mitchell.
A. S. von Mansfelde.
Benj. F. Bailey.

BOOKS RECEIVED.

Human Heredity. By Casper L. Redfield. Cloth. Pp. 112. Price $1.50. Chicago: Heredity Publishing Co.

Operative Surgery. By John J. McGrath, M. D., F. A. C. S. Cloth. Pp. 863, with illustrations. Sixth Edition. Price $8.00. Philadelphia: F. A. Davis Co. 1921.

In Memoriam

This Page is Inscribed to the Memory of

Joseph M. Aikin

Secretary-Treasurer

Of the Nebraska State Medical Association
1911-1920

Born July 18, 1857
Died November 18, 1920

In Memory of

The Members of the Nebraska State Medical
Association Who Passed to the
Great Beyond
1920-1921

K. E. Thompson	July 6, 1920
Warren Perry	July 7, 1920
C. H. Davies	Sept. 9, 1920
C. T. Burchard	Sept. 14, 1920
E. W. Cook	Oct. 14, 1920
Mary A. Quincy	Dec. 7, 1920
C. E. Hershman	Dec. 22, 1920
H. C. Gibson	Jan. 1, 1921
L. A. Merriam	Jan. 25, 1921
J. F. Stevens	Febr. 23, 1921
E. R. Seasongood	Febr. 27, 1921
C. A. Anderson	March 5, 1921
H. J. Arnold	April 13, 1921

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A SERMONETTE ON CATACOUSTICS.

Some Nebraska members of the organized profession travel as far as four hundred miles to attend State and independent medical society meetings. It may safely be assumed that the members who attend these meetings have in mind a serious purpose,—that of hearing the papers and the discussions thereto. It may also be asserted—and it will be freely admitted—that many have been grievously disappointed over the miserable acoustics in the assembly rooms. Members who have attended the annual meetings for a series of years will certify that the condition is somewhat chronic — that it has occurred more than once. The writer's recollection carries him back over some thirty years of annual meetings and a check of the meeting places recalls to mind about three places, in all those years, in which the acoustic properties were anywhere near perfect.

The trouble is that we seem to think we must use the ballrooms in hotels which were not specially designed for lecture rooms or auditoriums. The crowds at hotels are restive and keep surging in and out of the meeting rooms which adds to the noise.

It should be possible to obtain an auditorium with good acoustic properties with fixed seats, with carpeted floors, such as a church or lodge room for these meetings.

Without intentional disrespect to anybody, but calling attention to a very serious matter, the proposition is advanced that a committee of arrangements has not done its duty when it has the promise of a ballroom at a hotel in which there is more noise than is made by an aeroplane in action.

TYPHOID FEVER IN NEBRASKA NOW AND IN PIONEER DAYS.

Perhaps nothing better illustrates the progress made by medical science in a generation than a few facts about typhoid fever.

For 1920 the bureau of health reports for Nebraska, exclusive of Douglas and Lancaster Counties, eighty cases of typhoid. A sparsely settled country community comprising about one-fourth of an ordinary county in the early eighties of the last century developed seventy-five cases of typhoid in one summer and fall. The example given was typical of probably every other community at that time. That was the era of shallow open wells, surface water and unsanitary surroundings. It has been known to science for fifty years that typhoid is a waterborne disease, but it remained for the unsavory Chickamauga episode of the Spanish War to teach us that open latrines, flies and unprotected food form a death dealing trio.

It is hard to believe nowadays that in a family of twelve in which all but the mother and nursing babe contracted the disease, when the physician suggested that the cause was no doubt in the well (by the stock yard). he was scoffed at. After all had recovered, the father still a doubter, opened the well and found a decayed rabbit, dead rats, decayed corn husks, cobs, etc., and became a convert.

SUMMER DIARRHEA.

It is a matter of common observation that infants suffer much more frequently from digestive disturbances in summer than any other season of the year. The expression "summer diarrhea" has come to include a number of clinical entities, namely, simple diarrhea, acute indigestion, lienteric diarrhea, enterocolitis, dysentery, and cholera infantum.

The causes of these conditions can be grouped under two general heads. First, the character of the feeding. Second, the season of the year. Dr. Holt of New York, in a very extensive statistical study of this subject, has shown that 97% of all cases are in bottle fed infants, and only 3% in the breast fed. This is conclusive evidence that the character of the food is at least the chief exciting cause. However, as these conditions occur almost entirely in the summer it follows that the season also has a decided influence. The reasons why breast fed infants suffer less may be summarized as follows: A food suited to their needs, of an even temperature, always sterile, a raw food, and containing all the elements necessary for proper nutrition; and lastly, biologically suited to the human infant.

The influence of the season is explained in two ways. First, intense heat lowers the vitality of the infant and impairs its digestive power. Finklenstein demonstrated some years ago that he could produce diarrhea in infants by keeping them for a time in a superheated room. Second, cow's milk cannot be kept or modified to be as easy of digestion as breast milk. Furthermore, cow's milk undergoes fermentation and putrefaction much more readily in warm weather. As Dr. Vaughn has shown, pathogenic bacteria only thrive at a temperature of 60° and above, hence, the bottle fed infant has two handicaps; character of the food, and the heat of the season.

It is well established by statistics that summer diarrheas are much less frequent in some of the eastern cities than in former years due to better knowledge on the part of the public and a cleaner milk supply. Statistics have furthermore shown that at the present date summer diarrheas are relatively less in cities than in the country.

Nearly all cases begin with diarrhea, either putrefactive or fermentative. This is nature's remedy for eliminating undigested food from the digestive tract, and many cases are arrested at this point. If not, then the condition commonly called enterocolitis follows. This is characterized by frequent stools containing mucus, usually with fever, and often secondary complications. If the enterocolitis persists it is usually due to one of the following three conditions:—Follicular enteritis, ulcerative enteritis, or membranous enteritis. That type called dysentery is characterized by two prominent symptoms, namely, blood stained stools and tenesmus. In this type it is usually the colon and rectum that are chiefly involved. Cholera infantum is characterized by watery stools, persistent vomiting, high temperature and rapid prostration. This is probably a pure toxic condition. That is, certain toxins are already developed in the milk as a result of bacterial growth. Fortunately cholera infantum is comparatively rare.

In the care of bottle fed infants in summer the following principles of treatment are generally recognized:

1. Avoid overfeeding either in quantity or frequency. Even when an infant is doing well on a milk formula, it is wise to weaken it on the advent of hot weather. Mothers often mistake thirst for hunger and because the infant is thirsty, it takes more food than its digestive organs can assimilate. As a rule infants will not take care of as high percentage of cream in summer as in winter.

2. During the hot weather many infants actually suffer for water. They should have water freely as it is both antipyretic and aids in elimination.

3. When foul stools occur, or vomiting; all milk should be entirely stopped for a time and the infant given a simple gruel mixture.

4. If a bottle fed infant in the summer has either fever, vomiting or diarrhea, the parents should promptly call their family physician and should follow his advice strictly.

—H. M. McC.

GYMNASTICS FOR THE EARLY AGED.

The problem of providing the aging business or professional man with enough exercise to delay physical decay, without killing him from overexertion, is a perennial one. If overeating be avoided the danger of under exercise is greatly exaggerated. In this connection one recalls the remark of Senator Evarts, the famous jurist who lived in fine intellectual vigor to the age of 83. When asked how it was that he kept so well he said: "Well, I suppose it is because I take so little exercise." On the other hand, we can all remember hearing of well known would-be young olds who have dropped dead on the track or the tennis courts; or of such eminent men as the late Dr. Senn, who died from the effects of mountain climbing at about the age of 60. While attending a medical convention, the writer met a physician of 65 who told of the good times which he and three other old M. D.'s had at their bowling club. When asked if that wasn't rather strenuous work for men over 55 he admitted that the club had gone to pieces because two of the members developed appendicitis, one died of heart failure and he, the fourth, was threatened with something of the sort, "but they had a fine time while it lasted." In fact, for an unobtrusive method of carrying out the Oslerian plan, the encouragement of active athletics for men over 60 is perhaps one of the best.

Turning to the other side of the shield there can be little doubt that if men are to keep on eating anything like the amount that they want to, they will be better able to stand it if a reasonable amount of moderate exercise be taken. This involves the difficulty on the one hand of keeping the men whose spirits are younger than their arteries from doing too much; and on the other to get the much larger class, those who are lazy and getting more so, to take the time and make the effort to keep themselves in reasonably good trim. Golf solves the problem for a good many, but golf takes money and so much time that it will never fill the bill for the large majority. For those whose mental output is of no value to the community, this loss of time need not be considered; but for others, the amount of time wasted in this wholly unintellectual pursuit is really appalling. Some one has attributed the intellectual decadence of England to the activity and prevalence of the golf bacillus. Far more profitable mentally and just as useful physically, is the occupation of the "bird-chaser", or that of the solitary hiker who takes his exercise while reflecting on the mysteries and beauties of nature; and if one will carry a light five foot staff, changing it occasionally from one hand to the other, he will get decidedly more exercise for the arms and shoulders, than he will in the same time at golf.

Light gardening has decided intellectual as well as physical attractions for the head worker, but it offers decided temptations to over exertion; and the stooping and straining which it often involves may be decidedly dangerous to the man who is living on a narrow margin of arterial strength.

While we all concede the advantage of taking our exercise in the open air, we can not blink the fact that there is a very large number of men who are too busy, or who think they are, to take any daylight time for systematic exercise. Many of this class soon grudge "wasting" time on physical culture even during the evening hours, because they want that time for professional or general reading. For such, and for others on the days when outdoor work can not be followed, the staircase gymnasium can be safely recommended. A good light should be provided at the top, and if the whole staircase is to be used, at the bottom also. With a good novel or other form of light literature which would hold the attention of the performer, he then proceeds to walk slowly up and down the stairs from fifteen minutes to three quarters of an hour according to his desire and capability. This gives better exercise for the leg muscles and for the heart than ordinary walking, and it can be adjusted to every grade of muscular and heart strength. Personally, the writer finds that the best plan is to walk only half way down the stairs, where there is a landing, and back. This he is able to keep up for an indefinite length of time with only a slight rise in pulse rate and with no feeling whatever of breathlessness, others may find it safer to use even no more than five or six steps up and down. This provides no exercise for the muscles of the arms but when reading a good book it is perfectly easy by changing the book from hand to hand to keep up exercise with the unemployed hand without seriously distracting the attention from the contents of the book. The great advantage of this form of exercise aside from its cheapness and availability is that it can be done without the sense of boredom which generally attends the performance of room gymnastics without something else to keep the mind occupied.

The writer has often wondered why the elevators in our city buildings are not utilized for exercise. For persons with weak hearts who nevertheless need exercise both for the heart and other muscles, riding up in the elevators and walking down, repeating the performance as often as desired, is an excellent substitute for the Oertel system of gymnastics.

—H. G.

MEDICAL EXAMINATION OF SCHOOL CHILDREN AND SCHOOL HOUSE VENTILATION.

Not so many years ago the writer was invited to inspect 300 children attending a private school. The examination was confined to the eye, ear, nose and throat, the object being to find out what percentage of children was free from abnormal conditions. The result was interesting and exceedingly surprising, as out of the 300 examined, 125 were found to have at least one ailment, while many were suffering from complications. Hypertrophied tonsils and adenoids predominated, next in frequency errors of refraction, while aural and nasal discharges were plentiful. Congenital and traumatic catarrh were found in a few pupils. All these individual findings were written on blank cards and taken home to the parents. Another surprise developed. The parents were, on the whole, not favorably impressed with the reports, and in fact several were rather provoked at the idea of the school's action, expressing indignation that a physician had the audacity to undertake this work, and further insinuated that graft was at the bottom of the procedure.

Further to relate, comparatively few of these children were treated, and these by other physicians than myself.

Today we have our systematized school inspection carried on by municipal authorities, with the hearty cooperation of pupils and parents.

The medical profession should, in a way, consider this a privilege, in that the laity has expressed its confidence in us, and really place their children under our complete jurisdiction, where it is our duty to decide whether or not a child should be admitted or readmitted to school after certain types of disease; whether in our opinion certain operations must be performed before these children will be allowed to resume their studies, in fact, where we are appointed as judges to decide to a greater or less degree just what procedure shall be followed in individual cases. As has been stated, this power we wield should be respected and we must determine to the utmost of our ability, just what may be best for a child. We depend upon our examining nurses to inspect the children, and whenever abnormal conditions are found, they are to be referred to the family physician. Quite often a nurse may feel that a child requires surgical or medical treatment, but it should be our obligation to check up these findings and determine whether or not hygienic or living conditions may be the primary cause of complaint.

Poor ventilation very often explains a child's backwardness, ill health and often a stunted intellect. If I am correctly informed, but few of our western schools are equipped with ventilating systems, and we rely upon the opening of windows during recess to purify the class room.

A striking example of what improper environment will do is that of a gentleman who had a Sunday school class of twenty young men. They were crowded into a very small room, no ventilation, particularly during the winter months. This gentleman consulted his physician who could find no definite cause for his debility. He sought the advice of a famous clinic, where, expecting a tonsillectomy, nothing was detected. On his return home, his condition continued gradually worse, and his family became alarmed. As a last resort he was advised to give up his Sunday school work. He immediately improved, gained weight, and in fact completely recovered.

Why should not this lesson be carried to our public schools, and the home also. Probably the efficiency of our children will show a pronounced betterment. Great progress has already been made, and we may expect progress in the future.

—L. B. B.

As if automobilists did not have enough trouble and expense, after New Year front as well as rear number plates will be required.

One of the able medical men of the state has promised the Journal a series of articles on State Medicine. The series will be published editorially and will begin in early fall.

The July issue of the Medical Review of Reviews will contain a lengthy original contribution by Mme. Curie entitled, "The Radio Elements and Their Applications." It is, we believe, the first and only contribution which this noted scientist has made to an American publication and is extremely valuable. A copy of the July issue containing it will be sent gratis to any physician making the request.

Address the Medical Review of Reviews, 51 East 59th Street, New York.

A CASE OF ARTHROPLASTY OF THE TEMPORO-MAXILLARY ARTICULATION.

S. R. Hopkins, M. D., Hastings, Nebraska.

This case is reported as a matter of general interest. It demonstrates the application of arthroplasty to the temporo-maxillary articulation in cases of ankylosis of this joint and shows the good and lasting results obtainable.

This boy is twelve years old and was referred to me by Dr. Hamel. Following a suppurative otitis media when he was eighteen months of age, he was unable to open his mouth. The inability to separate the teeth was complete after six months; so that for ten years the only food taken was liquid sipped between the teeth, or soft articles of diet worked into the mouth through an aperture produced by the decay of a lower first molar.

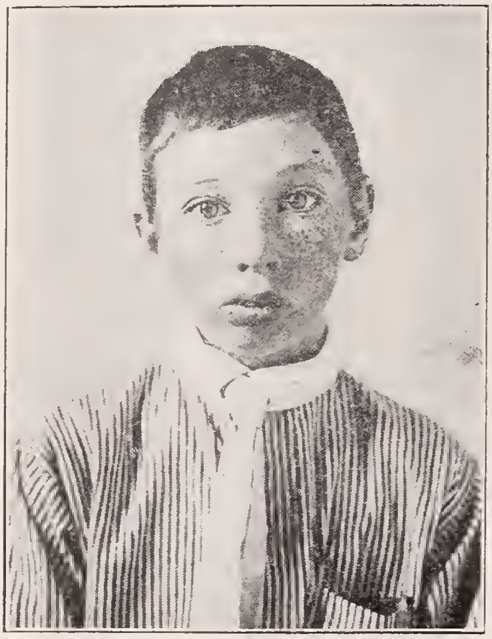

Fig. I.—Shows flattening on normal side.

The operation here performed is the one used and perfected by the late Dr. J. B. Murphy. It was found that a complete bony ankylosis existed between the surfaces of the temporo-maxillary joint.

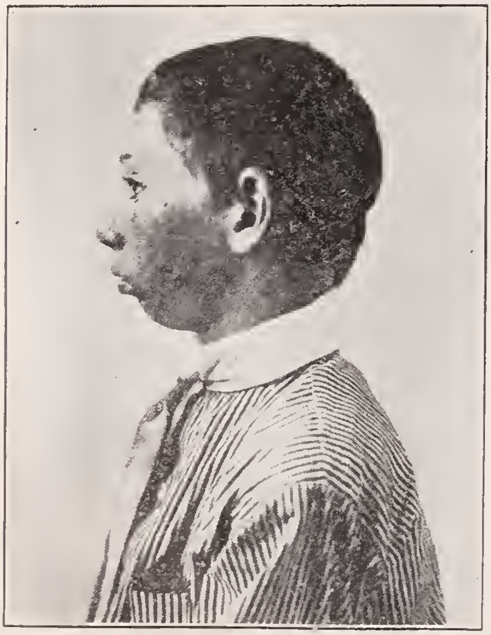

Fig. II.—Shows recession of chin.

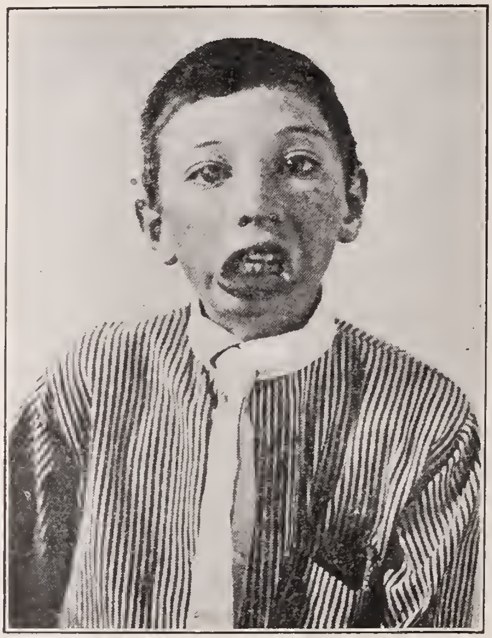

Fig. III.—Shows extent to which mouth could be opened prior to operation.

Between the under surface of the zygoma above and the sigmoid notch and coronoid process below, was a mass of dense fibrous tissue which aided the articular ankylosis in maintaining a perfectly stiff joint.

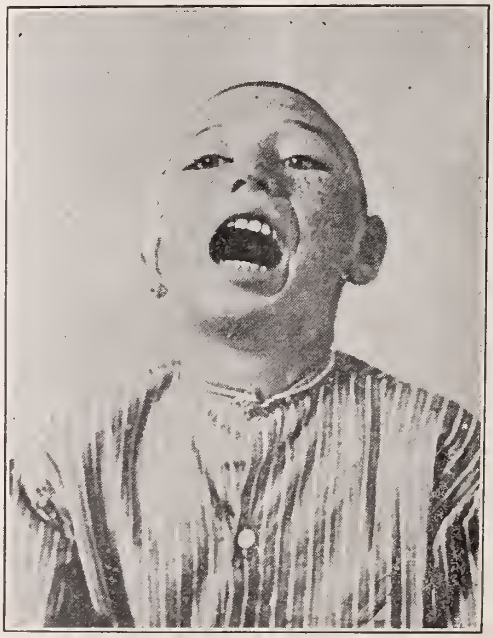

Fig. IV.—Ten days after operation. Mouth open one and one-fourth inches between incisor teeth.

The neck of the condyloid process was cut through near the articular end with a Gigli saw and a quarter of an inch of it removed. The teeth however, did not separate until the tip of the coronoid process was clipped off and the fibrous tissue between zygoma and sigmoid notch cut away. Then the mouth opened easily one and one-fourth inches in front.

A large flap from the fascia of the temporal muscle was formed and tucked and sutured into place in such a way as to interpose between the cut ends of the bone, and extend well forward to prevent reuniting of zygoma with sigmoid notch and coronoid process.

An interdental splint between the posterior teeth on the side operated upon prevented pressure on the flap for a week, then it was removed and the patient began to masticate.

The operation was done September 6, 1920 and now, six months later the mouth is easily opened one and one-fourth inches between the incisor teeth.

DIAGNOSIS OF PELVIC LESIONS BY THE X-RAY.

C. G. Moore, M. D., Fremont, Neb.

In the past we have used the X-ray in diagnosing lesions of the head, chest, extremities, abdomen, and of the hollow viscera by the aid of barium or salts which obstruct the rays. Until recently we have been unable to radiograph the pelvic organs with any diagnostic accuracy until we discovered in X-ray plates that the areas which were inflated with gas showed up clearer and with more definition than those which were not, such as the hepatic and splenic portion of the colon and the upper portion of the stomach and cavities which contained pus and gas.

In case of intestinal obstruction we have been able to radiograph the intestinal tract with a clearer definition than if a shadow casting medium had been used. However, we have now devised the scheme of putting the pelvic organs in suspension in a medium of gas, preferably nitrous-oxide and from which we have coined the phrase "pneumoperitoneum."

By injecting the peritoneal cavity with hydrogen we are able to radiograph the viscera of the pelvis as well as those of the upper abdomen. The uterus, tubes and ovaries may readily be seen and the contour of these organs determined. Large pus tubes, ovarian cysts, adhesions and malformations of the uterus may be seen.

As to the technic I may say a few words as to how it is carried out at the present time. The procedure should be considered surgical and should be done in a hospital, especially when hydrogen is used, but probably by a more refined technic and the use of CO_2 we will be able to do this work in our office in the near future.

There are two methods of inflating the pelvis—the abdominal and the uterine. The abdominal method is performed by inserting an aspirating needle into the abdominal cavity just below the umbilicus and allowing the gas to pass in through the needle from the container. The intrauterine method is performed by inserting an especially constructed needle into the cervix and allowing the gas to pass in by way of the tubes. I think the abdominal route is the better for very often we find occlusion of the tubes which renders the passage of the gas impossible. (This may be a good way to ascertain if sterility is caused by occlusion of the tubes.)

We have been using hydrogen as a medium but find that the dangers are not small from its use for it is very slowly absorbed and causes the patient a great deal of discomfort and sometimes alarming symptoms and the necessity of being confined in the recumbent position from twenty-four to forty-eight hours. Carbon dioxide is much safer to use as it is absorbed in from twenty to thirty minutes, but is disadvantageous for we have to be rather dextrous and expeditious in making our exposures due to its quick absorption. As to the amount of such gas to be used it is not advisable to inject over 500 cc. at a minimum pressure at one sitting. The patients should always be in the supine position with the pelvis elevated, when making the exposures as this position tends to throw the bowels in the upper portion of the abdomen and the gas in the pelvis.

SOCIETY NOTES.

The regular monthly meeting of the Nemaha County Society was held at Auburn at the home of Dr. Lorance on June 2.

A combined meeting of the Box Butte County Medical Society and the St. Joseph Hospital staff of Alliance was held at the hospital on June 2. An interesting program was given by Dr. Schoch and Dr. Hand.

At a meeting of the Republican Valley Medical Society at Arapahoe in May, a motion was passed to change the name to the Tenth Councilor District and Republican Valley Medical Society. The fall meeting will be held at Hastings in October.

HOSPITAL NOTES.

The widow of the late Dr. E. M. Whidden, Nebraska City, has prepared and equipped her home for a hospital open to the public.

The Blue Valley hospital at Hebron is to be enlarged.

The Sidney General Hospital after a short, and presumably meteoric career has been transformed into a rooming house.

Dr. C. L. Hustead, Falls City, has purchased the Falls City Community Hospital, and will conduct it.

The Nebraska District of the Evangelical Association will erect a $100,000 hospital at Lincoln.

The Cooperative Hospital at McCook has been transferred to Vincent Jones, and will be converted into a rooming house.

If any member of the profession knows of a good location or a sanatorium position, or some one wants to sell out, kindly address by letter.

Dr. J. G. Kennedy, Elk City, Kan.

NOTES ABOUT THE DOCTOR

Dr. Earl Matheny has become city physician of Havelock.

Dr. and Mrs. C. E. Slagle of Alliance, sailed for Europe June 1.

Dr. Biggs, formerly of Hershey, has succeeded Dr. Levy at Paxton.

Dr. H. A. Skelton of Spencer recently suffered a severe stroke of paralysis.

A doctor's telephone exchange has been instituted in Omaha, at Harney 1115.

Dr. A. J. Habenstreit has moved from Omaha to Howells, to engage in practice.

Dr. Alfred Lewis of Valentine, has returned from a winter sojourn in California.

Dr. S. B. Lutgen of Brock was badly injured early in June when his car completely overturned.

Dr. O. C. Diehl of Diller, who has been very ill in a hospital at Beatrice, has about recovered.

Dr. J. V. Hinchman of Blair, has been appointed physician to the Soldier's Home at Grand Island.

Dr. F. B. Cyphers of Duncan, recently took a four-week's Medical course at St. Joseph's Hospital, Omaha.

Dr. C. L. Egbert of Hastings, underwent a serious operation at Ensworth hospital, St. Joseph, Mo., recently.

Dr. Charles E. Remy of Johnstown, has become one of the assistant physicians at the Norfolk State Hospital.

Dr. J. C. Swartzlander of Sidney, has been in a Denver hospital having a serious time with an offending eye.

Dr. James F. Edwards has resigned as health commissioner of Omaha and has been succeeded by Dr. A. S. Pinto.

Dr. H. G. Morris, for fifteen years a practitioner at Creston, has become associated with Dr. Frank Jensen at Newman Grove.

Dr. W. A. DeMay of Danbury and Dr. G. A. DeMay of Indianola are planning to move to McCook, where they will open offices.

Dr. W. E. Doane who for some time served the Surprise community, has returned to his former field of practice, North Bend.

Dr. William Walvoord of Newman Grove, has moved to Dunlap, Ia., where he will be associated with his brother, Dr. James Walvoord.

Dr. E. S. Wegner, formerly of Omaha, has located in York, and has become associated with the York Clinic and Hospital, as pediatrician.

Dr. J. A. Tamisiea, since returning from the war a practitioner at Howells, has returned to Omaha where he formerly was engaged in practice.

Dr. Charles T. Needham of Page, has sold his property to Dr. O. W. French, formerly of Ewing, and has gone east to take a six months' course in obstetrics.

Dr. Howard C. Stewart of Tecumseh, has accepted a position as physician in public health service for Montgomery county, Tenn., and will be stationed at Clarksville.

Dr. Elton Bennett, an Alliance product and a recent graduate of the Nebraska University College of Medicine, has become associated with Dr. C. E. Slagle of Alliance.

Colonel Henry Page, lately a medical officer at Ft. Crook, has retired from the army after 21 years of service, to become dean of the medical school of the University of Cincinnati.

Dr. S. A. Wright of Loveland, Colo., one of the early practitioners in Pawnee county, has been visiting the scenes of his earlier medical career. Dr. Wright is a veteran of the civil war and with his wife has been spending some time going over the battlefields of the south.

Dr. Harold Gifford of Omaha was conferred with the honorary degree of doctor of laws by the University of Nebraska at the 1921 commencement. This is the first time such a degree has been conferred on a member of the medical profession in the history of the institution.

NECROLOGY.

Dr. J. M. Knott, eminent Sioux City physician, known to many in northeast Nebraska, died in Los Angeles, May 14, aged 74 years. Dr. Knott was a veteran of the civil war, a graduate of a medical school at Washington, D. C., 1870, and had practiced medicine in Sioux City since 1872.

Dr. W. K. Loughridge of Omaha, died May 19, of kidney disease, aged 47. He was a graduate of Lincoln Medical college, 1894, organized a hospital at Milford some years ago and was interested in general surgery.

Dr. C. F. Stockert of Lincoln, physician and druggist, died the latter part of May following a surgical operation. He was 50 years of age and was a graduate of Rush, '93.

HYMENEAL.

Dr. John J. Gleeson of Omaha, was married to Miss Grace Peters of Red Oak, Ia., on June 8.

Dr. Floyd M. Collins of Clarks and Miss Clara Beck of Peru were married on May 21.

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CONTENTS

Page

Lyon-Meltzer Gall-Bladder Drainage, Adolph Sachs, M. D., Professor of Internal Medicine, Creighton Medical College, Omaha 225

Traumatic and Effort Hernia, J. W. Duncan, M. D., (From Department of Surgery, the John A. Creighton Medical College), Omaha 235

A Rational Viewpoint in the Practice of Medicine, Irving S. Cutter, B. Sc., M. D., Omaha 243

A Civilian Surgeon's Story of the Great War, H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb. Formerly Lt. Col., M. C., U. S. Army 250

Editorial 254

Society Notes 258

Hospital Notes 259

Notes About the Doctor 259

Necrology 260

Hymeneal 260

LYON-MELTZER GALL-BLADDER DRAINAGE.*

Adolph Sachs, M. D., Professor of Internal Medicine, Creighton Medical College, Omaha, Neb.

Infections of the biliary tract are extremely common, hence of interest to all medical practitioners and a great deal has been written about the subject in the past. However, a great advance has been made in that we are now able to make a direct examination of the bile, which informs us as to the patency of the ducts, and the types of infection that we are dealing with. The method is known as the "Lyon-Meltzer Gall-Bladder Drainage."

In April, 1917, Meltzer published an article in the "American Journal of the Medical Sciences", on the disturbance of the law of contrary innervation as a pathogenic factor in the diseases of the bile ducts and gall-bladder, and in a footnote of this article, he states that if a 25% solution of magnesium sulphate is applied directly to the duodenum, without first passing over the gastric mucosa, it will cause a complete relaxation of the duodenum, and possibly the sphincter of the common duct.

Following this article, Lyon put this valuable suggestion into practical use and opened the way for more scientific diagnosis and treatment of gall-bladder lesions.

The method is still in its infancy, and will need many corrections before it is properly placed. We naturally must encounter the hyper-enthusiast who will give it more credence than it deserves, and the pessimist who will at once denounce it because he is loathe to accept anything that is new or valuable, and yet offers insufficient proof against it.

In the past ten months, I have had one hundred and twenty cases, with over three hundred and fifty biliary drainages, and I feel that it is a great aid diagnostically and therapeutically. It opens many new avenues for research and investigation, and I wish briefly to report some methods employed and results obtained in our cases.

It will be necessary to review briefly some of the anatomy and physiology, so as to understand the principle involved.

The liver, gall-bladder, bile ducts, stomach and duodenum are all parts of the primary entoderm forming the alimentary canal. The original liver develops as a diverticulum from the duodenum, and the gall-bladder and bile passages as a diverticulum from it. These organs also receive the same blood and nerve supply, and McCarthy aptly calls it the gastroduodenohepaticopancreatic physiologic system.

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*Read before the Nebraska State Medical Association, Lincoln, May 9-12, 1921.

The common bile duct is guarded by a sphincter which is known as the sphincter of Oddi, being first described by him in 1887, and confirmed by Hendricksen in 1898. This sphincter is of great importance, and it is through its relaxation that we are able to drain the bile ducts.

The secretion of bile is continuous, but the flow of bile into the duodenum is intermittent. The continuous flow is prevented by the sphincter of the common duct (muscle of Oddi) and the bile is backed up into the gall-bladder. Experimental work shows that normally, no bile appears in the duodenum as long as the stomach is empty. When food is taken and the chyme enters the duodenum it is followed by an ejection of bile. This is probably caused by a reflex action, causing a contraction of the gall-bladder and a relaxation of the sphincter of the common duct.

It is a well known fact that a gastric chyme rich in fats, proteoses and peptones stimulates an excessive secretion of bile because it is needed for their digestion. Carbohydrates, however, call forth very little secretion of bile, but a large amount of pancreatic ferments.

The gall-bladder has a capacity of about 50 cc., and its walls consist of fibro-elastic tissue and unstriped muscle fibres, which are longitudinal, circular and oblique. Records made of its contraction show that the force exerted is quite small. According to Freese, the maximal contraction does not exceed 220 mm. (water) pressure, a force therefore which is about equivalent to the secretion pressure of bile as determined by Heidenhain.

								CELLS				BACTERIA		CRYSTALS			SMEAR						CULTURE						
PATIENT	TYPE	APPEARANCE	COLOR	SPECIFIC GRAV	REACTION	AMOUNT	VISCOSITY	ROUND	CYLIND	SQUAM	DEBRIS	MOTILE	NON MOTILE	AMORPH BILE SALT	CHOLESTRIN	FATTY ACID	COLON	STAPH	STREP	YEAST	EPITH	LELIC	SUBTILIS	STREP I	STREP H	STAPH	COLON	TYPHOID	DIAGNOSIS
MR E G	A	TURBID	L GOLD	1015	Alk	10cc	+	+	+	0	+	0	0	+	++	0	0	0	0	0	0	0	0	0	0	+	0	0	
	B	OPAQUE	BLACK	1024	Alk	20cc	++	+	0	+	+	0	0	0	++	0	+	0	0	0	0	0	0	0	0	+	0	0	CATARRHAL
	C	TURBID	YELLOW	1012	Alk	10cc	+	0	0	0	+	0	0	0	+	0	+++	0	0	0	0	0	0	+	0	+	0	0	JAUNDICE
MR B G	A	CLOUDY	L YELL	1010	Alk	40cc	+	0	0	0	++	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	
	B	CLEAR	L BROWN	1015	Alk	30cc	++	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	CATARRHAL
	C	CLOUDY	L YELL	1010	Alk	30cc	+	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	JAUNDICE
MRS A H	A	CLOUDY	L YELL	1010	Alk	40cc	+	0	0	+	+	0	0	0	0	0	++	0	0	0	0	0	+	0	0	+	+	0	
	B	TURBID	D GREEN	1020	Alk	35cc	++	0	0	+	+	0	0	0	+	0	+	0	0	0	0	0	+	0	0	+	+	0	CHOLECYSTITIS
	C	TURBID	L YELL	1015	Alk	20cc	+	0	0	+	0	0	0	0	0	0	+	0	0	0	0	0	+	0	0	0	0	0	
MRS C I D	A	CLOUDY	YELL	1035	Alk	45cc	+	0	0	0	+	0	0	+	+	0	0	0	0	+	0	0	0	0	0	+	0	0	
	B	OPAQUE	D GREEN	1018	Alk	20cc	++	0	0	0	+	0	0	0	++	0	0	+	0	0	0	0	0	0	0	+	0	0	CHOLECYSTITIS
	C	CLOUDY	YELL	1010	Alk	15cc	+	0	0	+	+	0	0	0	+	0	0	++	0	0	0	0	0	0	0	+	0	0	
MRS J B	A	TURBID	YELL	1030	Alk	10cc	+	+	0	+	++	0	0	+	+	0	0	0	0	+	0	0	0	0	0	+	0	0	POST OPERATIVE
	B	CLEAR	D GOLD	1020	Alk	30cc	++	+	0	+	+	0	0	0	+	0	0	0	0	+	0	0	0	0	0	+	0	0	CHOLECYSTITIS
	C	CLEAR	L GOLD	1010	Alk	15cc	+	+	0	0	+	0	0	0	0	0	0	0	0	+	0	0	0	0	0	+	0	0	CHOLEDOCHITIS
MR GEO R	A	TURBID	YELL	1025	Alk	17cc	+	+	0	+	++	0	+	+	0	0	0	+	0	+	0	0	+	0	0	0	0	0	CHOLECYSTITIS
	B	TURBID	D GREEN	1015	Alk	30cc	++	+	0	+	++	0	0	0	+	0	0	0	0	+	0	0	+	0	0	0	0	0	WITH SECONDARY
	C	TURBID	YELL	1015	Alk	11cc	+	0	0	+	+	0	0	0	+	0	0	0	0	+	0	0	+	0	0	0	0	0	ANEMIA - (TOXIC)
MRS H	A	TURBID	YELL	1040	Alk	50cc	+	0	0	+	+	0	0	+	0	0	0	0	0	0	0	0	+	0	0	0	+	0	
	B	TURBID	D GOLD	1021	Alk	20cc	++	0	+	+	+	0	0	0	0	+	0	0	0	0	0	0	+	0	0	0	+	0	CHOLECYSTITIS
	C	TURBID	YELL	1018	Alk	10cc	+	0	+	+	0	0	0	0	0	+	0	0	0	0	0	0	+	0	0	0	+	0	
MR M D	A	TURBID	YELL	1040	Alk	10cc	+	+	0	+	++	0	0	+	0	+	0	0	0	0	0	0	0	0	0	+	+	0	
	B	TURBID	D GREEN	1030	Alk	50cc	++	0	0	+	0	0	0	+	+	+	0	0	0	0	0	0	0	0	0	0	+	0	CHOLECYSTITIS
	C	TURBID	GOLD	1015	Alk	30cc	+	0	0	0	+	0	0	0	0	+	0	0	0	0	0	0	0	0	0	+	+	0	
MRS M H	A	TURBID	L GOLD	1035	Alk	10cc	+	0	0	0	+	0	+	+	+	+	0	0	0	0	0	0	+	0	0	0	0	0	CHOLELITHIASIS
	B	OPAQUE	BLACK	1030	Alk	10cc	++	0	0	0	+	0	0	+	++	0	0	0	0	0	0	0	+	0	0	0	0	0	INTERMITTENT FLOW OF
	C	TURBID	GOLD	1020	Alk	20cc	+	0	0	0	+	0	0	0	+	+	0	0	0	0	0	0	0	0	0	+	0	0	BILE Stone at Cystic Duct
MR N F	A	CLEAR	GOLD	1030	Alk	20cc	+	0	0	+	++	+	+	++	+	0	0	0	0	0	0	0	0	+	0	+	0	0	BILIARY STASIS
	B	OPAQUE	BLACK	1020	Alk	30cc	++	0	0	0	+	+	+	+	++	0	0	0	0	0	0	0	0	0	0	+	0	0	CARDIAC DECOMPEN-
	C	OPAQUE	D YELL	1010	Alk	25cc	+	0	0	0	+	0	0	+	0	0	0	0	0	0	0	0	0	0	0	+	0	0	SATION
MRS I L	A	OPAQUE	YELL	1040	Alk	10cc	+	0	0	0	+	0	0	0	0	+	0	0	0	0	0	0	0	+	0	0	0	0	POST OPERATIVE
	B	CLEAR	D GREEN	1025	Alk	30cc	++	0	0	0	+	0	0	0	0	+	0	0	0	0	0	0	0	+	0	0	0	0	CHOLECYSTITIS
	C	CLOUDY	GOLD	1020	Alk	20cc	+	0	0	0	+	0	0	0	0	0	0	+	0	0	0	0	0	+	0	0	0	0	CHOLEDOCHITIS
MR A M	A	CLEAR	YELL	1055	Alk	15cc	+	0	0	+	0	●	0	+	0	+	0	0	0	0	0	0	+	0	0	0	+	0	
	B	OPAQUE	BLACK	1020	Alk	15cc	++	+	0	+	+	0	0	0	+	+	0	0	0	0	0	0	0	0	0	0	0	0	CHOLECYSTITIS
	C	CLOUDY	YELL	1015	Alk	25cc	+	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	
MRS K	A	CLOUDY	GOLD	1030	Alk	20cc	+	0	0	+	+	0	++	+	0	+	+	0	0	0	0	0	0	+	0	0	+	+	
	B	OPAQUE	D GREEN	1020	Alk	20cc	++	0	0	0	+	+	++	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	CHOLECYSTITIS
	C	TURBID	GOLD	1015	Alk	15cc	+	0	0	+	+	+	+	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	CHOLELITHIASIS
MRS S C	A	CLEAR	L YELL	1055	Alk	45cc	+	+	0	0	0	0	0	+	0	+++	0	0	0	0	0	0	0	+	0	0	0	0	
	B	CLEAR	BROWN	1025	Alk	40cc	++	+	0	+	++	0	0	0	0	+++	0	0	0	0	0	0	0	+	0	0	0	0	PERNICIOUS ANEMIA
	C	CLEAR	GOLD	1015	Alk	19cc	+	+	0	0	+	+	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	(LUES)
DR S	A	CLOUDY	YELL	1050	Alk	15cc	+	0	0	+	+	0	0	+	0	0	+	0	0	0	0	0	+	0	0	0	0	0	
	B	CLOUDY	D GOLD	1028	Alk	20cc	++	0	0	+	0	0	0	+	+	0	+	0	0	0	0	0	+	0	0	0	0	0	CHOLECYSTITIS
	C	CLEAR	YELL	1010	Alk	20cc	+	0	0	+	0	0	0	0	+	0	0	0	0	0	0	0	+	0	0	0	0	0	(LUES)
MRS S	A	TURBID	L YELL	1035	Alk	15cc	+	0	0	+	+	0	0	+	+	+	0	+	0	0	0	0	+	0	0	0	+	0	
	B	OPAQUE	BLACK	1028	Alk	20cc	++	+	0	0	+	0	0	0	+	++	0	0	0	0	0	0	0	0	0	0	+	0	CANCER OF
	C	OPAQUE	GOLD	1020	Alk	5cc	+	0	0	0	+	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	+	0	GALL-BLADDER
MRS P	A	TURBID	D YELL	1018	Alk	20cc	+	0	0	+	+	0	0	+	+	0	+	0	0	+	0	0	0	+	0	0	+	0	
	B	TURBID	D BROWN	1020	Alk	35cc	++	0	0	+	+	0	0	0	+	0	0	+	0	+	0	0	0	+	0	0	+	0	CHOLECYSTITIS
	C	TURBID	L GOLD	1012	Alk	20cc	+	0	0	+	+	0	0	0	+	0	+	0	0	+	0	0	0	0	0	0	0	0	PANCREATITIS
MR B	A	CLEAR	L GOLD	1014	Alk	20cc	+	0	+	+	0	0	0	+	0	0	0	0	0	0	0	0	+	0	0	0	+	0	HYPER-ACID
	B	CLEAR	D GOLD	1026	Alk	30cc	++	0	+	+	0	0	0	+	0	0	0	0	0	0	0	0	+	0	0	+	0	0	GASTRITIS
	C	CLOUDY	YELL	1010	Alk	15cc	+	+	+	+	+	0	0	+	0	0	0	0	0	0	0	0	+	0	0	0	+	0	SUSPICIOUS G B
MR R T	A	OPAQUE	L GREEN	1040	Alk	10cc	+	0	0	+	+	+	0	0	0	+	0	0	0	+	0	0	0	0	0	0	0	0	
	B	OPAQUE	D GOLD	1024	Alk	20cc	++	0	0	++	+	0	0	0	0	+	0	0	0	0	0	0	+	0	0	+	0	0	GASTRIC NEUROSIS
	C	OPAQUE	YELL	1020	Alk	16cc	+	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	COLITIS
MR R D	A	CLEAR	L GOLD	1040	Alk	10cc	+	0	+	+	+	0	+	0	0	+	0	+	0	0	0	0	0	+	0	0	0	0	
	B	CLEAR	D GOLD	1025	Alk	35cc	++	0	0	0	+	0	+	0	0	+	0	0	0	0	+	0	+	0	0	+	0	0	COLON STASIS
	C	OPAQUE	L YELL	1010	Alk	15cc	+	0	0	0	+	0	0	0	0	+	0	0	0	0	0	0	+	+	0	+	0	0	

SHOWING THAT TECHNIC, WITHOUT USE OF ANTISEPTICS
AND ASTRINGENTS, IS PERMISSIBLE

CHART I.

Judd and Mann have published some excellent experimental work on the effect of the removal of the gall-bladder on the sphincter of Oddi. In their article they state that the sphincter in a normal anaesthetized dog will stand from 100 to 150 mm. of (water) pressure, but after removal of the gall-bladder, it will only stand 40 mm. of (water) pressure. This sphincter, however, retains sufficient tone so that bile ducts dilate and act as a reservoir for the bile, in place of the removed gall-bladder. It would be quite natural to suppose that a sphincter with a lessened tone would allow a reflux of fluid from the duodenum into the ducts and hence into the pancreas, and be an added danger in producing a pancreatitis. Judd and Mann prove that this reflux is impossible because the orifice of the duct is guarded by a fold of mucous membrane, and they were unable to force fluid into the ducts by exerting a large amount of pressure.

McWhorter of Chicago has demonstrated that the application of 25% magnesium sulphate to the duodenum will reduce the resistance of the sphincter of Oddi 50 to 100 mm. of water.

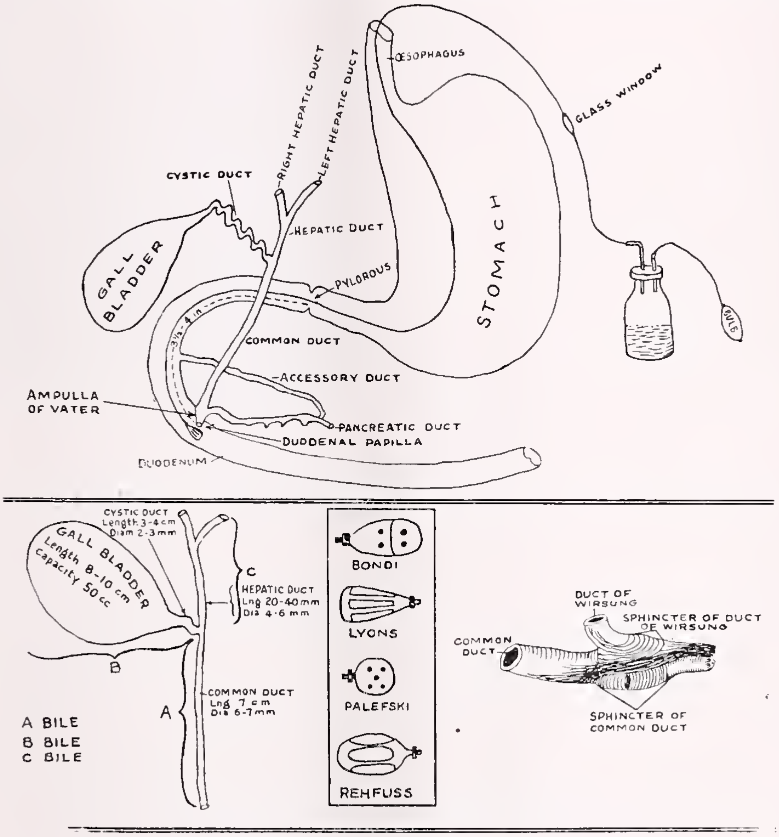


CHART II.

Doyon has especially studied the innervation of the gall-bladder and bile ducts. Experiments of this author show that the gall-bladder receives both motor and inhibitory fibres by way of the splanchnic nerves. These fibres emerge from the spinal cord in the roots of the sixth thoracic to the first lumbar spinal nerves, and pass to the celiac plexus by way of the splanchnic nerves. Motor fibres may also occur in the vagi. Sensory fibres capable of causing a reflex contraction or dilatation of the gall-bladder, are found both in the vagus and splanchnic nerves. Stimulation of the central end of the cut splanchnic causes a dilatation of the gall-bladder (reflex stimulation of inhibitory fibres). Stimulation of the central end of the vagus causes a contraction of the gall-bladder and a dilatation (inhibition) of the sphincter of the common duct. The afferent path is in the vagus, the efferent in the splanchnics (Bainbridge and Dale disagree with the findings of Doyon, Jour. Physiol. 33:138—1905).

Conversely, stimulation of the peripheral end of the splanchnic nerves causes simultaneously a relaxation of the sphincter of the common duct, and a contraction of the gall-bladder.

This shows a double or crossed innervation, upon which Meltzer bases his "law of contrary innervation". He not only applies this to the emptying of the gall-bladder, but to many other body functions.

Meltzer compares the biliary system to the urinary system. The kidney constantly secretes urine, and the liver constantly secretes bile. The urine is collected in the urinary bladder, and the bile in the gall-bladder. When the urinary bladder contracts, the sphincter relaxes and urination takes place. When the gall-bladder contracts, the sphincter Oddi relaxes and bile is ejected into the duodenum. The former is mostly under control of the will, but the latter is not. Nature properly cares for this function in health, but when this relationship is disturbed and the sphincter does not relax, or the gall-bladder does not contract, biliary stasis occurs and gives rise to many symptoms. Meltzer's theory is not accepted by all men and still needs further investigation and confirmation.

OPERATIVE CASES

PATIENT	A BILE	B BILE	C BILE	STATIC BILE	BLOOD	MICROSCOPIC FINDINGS					COMPLAINTS	OPERATIVE FINDINGS
						PUS	RED	CHOL	ROUND	CYLIN		
Mr C J	0	0	0	0	++++	+	++++	0	+	+	JAUNDICE C̄ SEVERE BACKACHE	CA OF AMPULE OF VATER AND HEAD of PANCREAS
Mrs S	0	0	0	0	++	+	++	0	+	+	ATTACKS OF PAIN UPPER RIGHT QUADRANT JAUNDICE	CA OF GALL BLADDER
Mrs Sch	+	0	+	0	0	+	+	++	+	+	ATTACKS OF PAIN UPPER RIGHT QUADRANT JAUNDICE	CA of GALL BLADDER CHOLELITHIASIS
Mr J N	0	0	0	0	++++	+	++++	0	+	0	JAUNDICE C̄ SEVERE BACKACHE	CANCER OF HEAD OF PANCREAS
Mrs F	+	0	+	0	0	0	0	+	0	0	ATTACKS OF PAIN IN EPIGASTRIUM & OVER G B	CHOLELITHIASIS (G B SCIRRHOTIC)
Mrs Jos S	+	0	+	0	0	0	0	0	+	0	ATTACKS OF NAUSEA VOMITING, JAUNDICE AND PAIN OVER G B	STONE IN CYSTIC DUCT
Mr F K	+	0	+	0	0	+	0	0	0	0	CHOLECYSTOSTOMY WITH RECURRENCE of SYMPTOMS	STENOSIS OF CYSTIC DUCT
Mrs M H	+	+	+	+	0	+	0	++	+	+	ATTACKS OF COLICY PAIN C̄ JAUNDICE	CHOLELITHIASIS BALL-VALVE STONE IN CYSTIC DUCT
Mrs A H	+	+	+	+++	0	+	0	++	++	+	NAUSEA VOMITING, COLICY PAIN AND JAUNDICE	CHOLECYSTITIS
Mr Geo G	+	+	+	+++	0	+	0	+	++	+	PAIN IN APPENDIX REGION & UPPER RIGHT QUADRANT	CHRONIC APPENDICITIS *
Miss M	+	+	+	+++	0	+	0	+	+	+	PAIN IN APPENDIX REGION & UPPER RIGHT QUADRANT	CHRONIC APPENDICITIS *
Mrs R	+	+	+	++	0	0	0	+	+	++	PAIN IN UPPER RIGHT QUADRANT GASTRIC DISTRESS	CHOLELITHIASIS CHOLECYSTITIS
Sr P	+	+	+	++	0	+	0	+	+	++	ATTACKS of BELCHING, BLOATING, NAUSEA, VOMITING	PERNICIOUS ANEMIA CHOLECYSTITIS
Mrs W	+	+	+	0	0	+	0	0	++	0	PAIN ACROSS UPPER ABDOMEN	CHOLELITHIASIS
Mrs D	+	+	+	0	0	+	0	0	+	0	ATTACKS OF PAIN IN GALL-BLADDER AREA	CHOLELITHIASIS
Mrs Jos M	+	0	+	0	0	0	0	+	++	0	ATTACKS OF PAIN IN UPPER RIGHT QUADRANT C̄ URINARY DISTURBANCES Cholecystectomy	HYDRONEPHROSIS * *
Wm Mc C	+	+	+	0	0	0	0	0	0	0	PAIN IN REGION OF UMBILICUS	CHRONIC APPENDICITIS G B NEGATIVE
Mr L F	+	+	+	0	0	0	0	0	+	0	PAIN OVER APPENDIX REGION	CHRONIC APPENDICITIS G B NEGATIVE
Mrs I W	+	+	+	0	0	+	0	0	0	0	PAIN IN LOWER RIGHT QUADRANT	CHRONIC APPENDICITIS G B NEGATIVE
Mrs B	+	+	+	0	0	+	+	0	I I	++	ATTACKS OF PAIN IN REGION OF UMBILICUS	OVARIAN CYST TWISTED ON PEDICLE G B NEGATIVE
Mrs E H	+	+	+	++++	0	+	0	+	+	+	DULL ACHING PAIN IN GALL BLADDER AREA NO COLIC	CHOLECYSTITIS ENTEROPTOSIS * * *

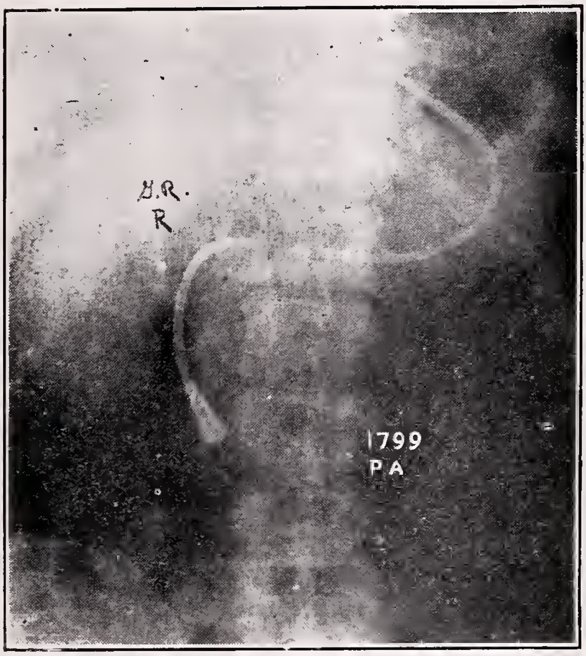
* SHOWING RELATION BETWEEN GALL BLADDER AND APPENDIX
* * FOR DIAGNOSIS BETWEEN HYDRONEPHROSIS AND RECURRENT GALL-BLADDER ATTACKS BILIARY DRAINAGE AIDED
* * * SHOWING STATIC BILE IN AN ENTEROPTOTICER

CHART III.

The duodenal tube has long been used for the aspiration of duodenal contents, duodenal feeding and therapy. We have been able to study bile pigments, pancreatic ferments and duodenal secretions, but we were unable satisfactorily to study bile in its relation to diseases of the biliary system until Meltzer published his valuable experiments, and Lyon made practical application of the same. The use of the duodenal tube is so simple and well known, that it is within the realm of all medical practitioners who care to give it the time and attention.

We all agree that a routine urine examination for suspected renal lesion, or a sputum examination for a suspected pulmonary lesion, is a valuable aid to diagnosis. I feel that a routine bile examination is just as useful in diagnoses of biliary lesions, and as time progresses, its use will be better known and recognized.

In aspiration of bile, a definite technique must be followed or misleading results will be obtained. The technique of Lyon is as follows: The patient comes to the office on a 12-hour fasting stomach. The teeth are carefully brushed, and the mouth and throat first rinsed with a permanganate solution (1 grain to the ounce), and then with a zinc chloride solution (Lavoris). A sterile duodenal tube is then passed into the stomach. The fasting residue is aspirated and examined chemically, cytologically and bacteriologically, if desired. The stomach is then thoroughly washed with water until the return washings are clear, noting the amount of mucus, shreds, etc. After the wash water returns absolutely clear, an astringent solution of zinc chloride (Lavoris 30 cc.—250 cc. water) is used to free the stomach of its mucus. Then it is disinfected by washing with a 1-10,000 solution of permanganate, or a weak solution of silvol (15 cc. of a 1-500 solution to 250 cc. water). The stomach is then again washed to clearness with water.



(A)
Normal Duodenal Curve.

The patient is now turned on his right side, and given two or three ounces of water to drink. He is then told to swallow the tube to the 75 or 80 centimeter mark slowly, taking at least twenty minutes in the last procedure. If this latter part of the tube is taken too rapidly it is apt to curl up in the stomach. After the metal tip has passed into the duodenum, and the duodenal contents are aspirated, it is especially important to note whether bile is present or not, thus noting the tone of the common duct sphincter. The duodenum is then douched with 75 cc. of a 33⅓% solution of warm magnesium sulphate solution. This is allowed to remain a short time, and then aspirated carefully, noting the amount of magnesium sulphate returned, so as to know the amount that can be used if restimulation is necessary. Lyon gives 90 cc. as a maximum, however, more than this can be used with safety.

We have modified this technique somewhat, in that we do not believe it advisable to use astringents and antiseptics as used by Lyon. Our cultures have proved to us that this is also unnecessary.

We have our patients thoroughly brush their teeth and rinse their mouths, with liquor antisepticus. We take great care in washing the stomach with water until the wash water is absolutely clear. We then wash with a sodium bicarbonate solution which is an aid in relaxing the pyloric sphincter and allowing the metal tip to pass into the duodenum more readily. Varying the position of the patient is also an aid in passing the pylorus.

There are several tests by which we can determine that we are in the duodenum.

1. The duodenal tug; 2. If the patient is given some water to drink, and if the bulb is in the stomach, it can be aspirated easily. If it is in the duodenum, it is hard to recover the injected fluid; 3. Duodenal contents are alkaline, stomach contents are acid; 4. Inject air, and if the bulb is in the stomach a rumbling or gurgling is heard; if in the duodenum, a hissing sound is heard; 5. The X-ray locates the bulb in its exact location; 6. The patient can occasionally aid us in telling its location.

After the duodenum is douched with magnesium sulphate, it takes an average of one to six minutes for the appearance of bile. In spastic cases, it may require a much longer time.

Lyon separates three types of bile: "A" bile from the common duct, "B" bile from the gall-bladder, and "C" bile from the liver and hepatic ducts. The bile is collected in sterile bottles and gentle suction is used.

It is sometimes difficult to tell just when "A" bile ceases and "B" bile starts to flow, also when "B" bile ceases and "C" bile starts to flow. Then again one can get three distinct sequences. It is my opinion that liver bile is constantly secreted on stimulation and is usually mixed with "B" bile. The amount of gall-bladder bile expelled varies according to the amount of stimulus and also the expulsion force exerted, whether this be gall-bladder contraction, external forces or other unknown phenomenon. Other substances such as sodium sulphate, glucose, peptone, sodium phosphate, etc., have been used to stimulate the flow of bile and we also find that we are able to get an occasional spurt of black bile by the use of warm distilled water. I use the term spurt because it takes a very small amount of concentrated bile (pigments) to give a dark colored bile in our collection bottle. Of all the salts used magnesium sulphate is undoubtedly the best relaxant and causes a greater flow of bile than any agent thus far described.

In normal cases "A" bile is light golden yellow and syrupy in consistency, "B" bile is dark golden and more viscid than "A" bile. Its cytological characteristics also vary from "A" bile. In determining "B" bile one should not depend on color alone but all factors must be determined. "C" bile is light yellow and thinner than "A" or "B" bile.

(B)
Acute Angulated Pathological Curve.

The biles are collected in separate sterile bottles for bacteriological, cytological, and chemical examination.

When the drainage is complete, the duodenum is douched with sterile water, and a brisk cathartic is given so as to avoid infection of the lower intestinal tract. The patient is then allowed to remain quiet for a short time, and is given a meal of tea and toast, or broth and crackers before leaving. This is absolutely necessary to avoid a sensation of weakness which occurs occasionally if the patient is not fed.

Normally, one should get no pathogenic organisms on culture, but in pathologic cases we may find streptococci, staphylococci, typhoid bacilli, colon bacilli, micrococcus catarrhalis, etc. It is absolutely impossible to get the stomach and duodenum entirely free from contaminating organisms, but a competent bacteriologist is readily able to separate these. The normal duodenum in a fasting patient, according to McNeal and Chace, is almost free from living organisms. Allen O. Whipple, in the May number of the "Annals of Surgery" suggests the use of a salol coated gelatine capsule to cover the duodenal tip to avoid contamination. The salol is not dissolved until the tip passes into the duodenum. He also reports a large number of cultures checked at operation, which shows its value if carried out properly.

Our cultures are taken on glucose broth, blood agar and endo media. It is best to plate out "A", "B" and "C" biles, noting the number of colonies on each growth. This aids us in locating where the infection is most predominant. Smithies suggests a very valuable point in showing that certain bacteria of bile may be attenuated, and insists on waiting a week or ten days before he declares cultures negative.

Positive cultures are undoubtedly of great value in localization of biliary lesions, but negative cultures are likewise an aid in ruling out certain lesions and also assuring us that our technique is correct.

Cultures are essential, but we feel that macroscopic and cytologic examinations of freshly obtained bile are as much, and at times of more value than cultures. A static infectious bile can be readily recognized macroscopically, and the types of organisms can be checked by a smear. It is important to note the time of the first appearance of bile, whether the flow is continuous or intermittent, and if it requires more than one stimulation with magnesium sulphate to obtain it. This informs us of the tonicity of the sphincter. It is especially important to note the appearance of the "B" bile which varies from a dark, golden, to a black, static bile, and from a syrupy, to a thick, purulent type. Its character may vary from a thin mucus to a gritty sand, which may lead us to suspect stones. Personally, I have not seen this typical sand as frequent as some men, but if found, it is of value. I do not depend on this method alone in the diagnosis of biliary lesions, but believe all methods at our disposal must be employed the same as in making any diagnosis—that is, a careful history, stomach analysis, physical examination, X-ray, etc. It is merely an aid the same as a urinary examination in renal lesions.

If we have a case of jaundice, and we get no bile after repeated stimulations, it is helpful in the diagnosis of common duct obstruction.

We have had five cases of jaundice with malignant obstruction to the common duct, in which no bile appeared on stimulation, but blood was immediately obtained. Two cases at autopsy proved to be carcinoma of the pancreas, two at operation were carcinoma of the gall-bladder extending to the common duct, liver, etc.; one died refusing autopsy, in which the clinical diagnosis was so evident that I am sure no error could have possibly occurred.

We have another patient at present under observation, in whom the same phenomenon occurred (blood on stimulation). The patient, a male, aged 54, became gradually jaundiced with increasing intensity and acholic stools. He has lost twenty pounds in weight, and has a large, palpable gall-bladder, with no signs of improvement. Our clinical diagnosis is a carcinoma of the papilla of Vater, and also an involvement of the pancreas.

In one of our cases, the diagnosis of stone in the common duct, or malignancy was in question, and getting blood on stimulation, and no bile, we decided in favor of malignancy. At operation a carcinoma of the gall-bladder with involvement of the common duct and liver, was found.

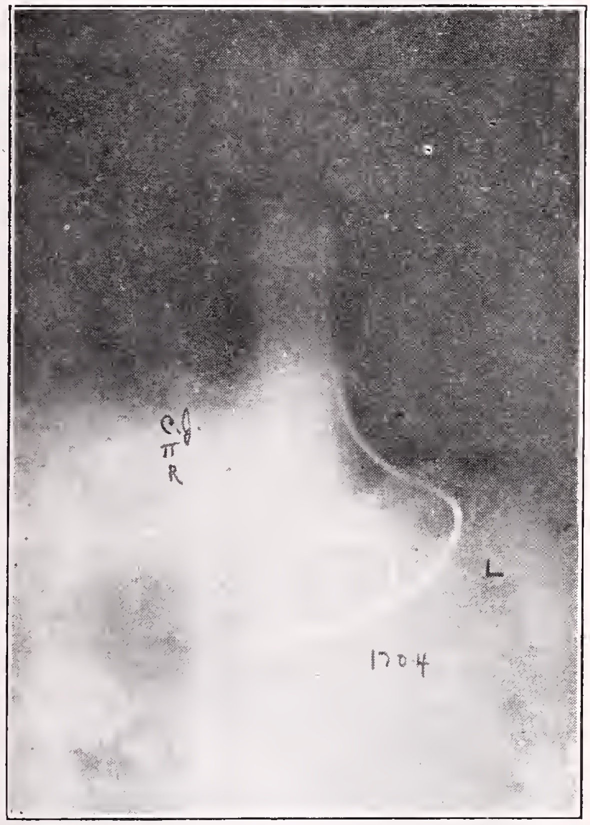
I do not mean to infer that no diagnosis of malignancy should be made without blood on stimulation, but if found, it is an added symptom.

Case. Mrs. S., aged 62. History of repeated biliary colics over twenty years duration. Gradually increasing jaundice with clay colored stools at various times, loss of twenty pounds in weight, and increasing weakness. On stimulation we were able to get bile, but never "B" bile. This case had a large number of red cells when examined, but no macroscopic blood appeared. A diagnosis of cholelithiasis, with a malignancy of the gall-bladder was made. This diagnosis was corroborated at operation.

Normally, very few cellular elements are found in duodenal contents, or in "A", "B" or "C" biles. In pathological cases, the cellular elements depend largely on the type and severity of the infection or disease present.

In a normal duodenal fluid, we may find an occasional columnar cell or round cell, fat needles, debris, etc. In duodenitis, a large number of round cells, columnar cells, fat needles, neutral fats, pus cells, a few red cells, bacteria, etc., are found.

In pathological "A" bile we find about the same picture as in duodenitis, except a large abundance of columnar cells and flocculi.



(C)
Duodenal Tube Curved in Stomach, From Passing Tube Too Rapidly.

In pathological "B" bile, we find deeply pigmented clumps of columnar cells, pus cells, mucus, few red cells, cholesterin crystals, bacteria, etc. In pathological "C" bile, the cellular elements are also increased. We find pus, columnar cells, bacteria, mucus, etc.

We can usually recognize "B" bile easily, but occasionally there is some doubt. In these cases, we have found that cholesterol determinations have been of value. In our experience we have always found an increase in cholesterol in "B" biles (more than "A" or "C"). It is well known that gall-bladder bile contains the largest amount of cholesterol.

We also have found an increase in the bile pigments and salts in "B" bile. An effervescence in the bile occasionally seen while collecting it for diagnostic methods, is claimed by Lyon to be due to an increase in carbonates which are acted upon by a spurt of hydrochloric acid from the stomach. A spurt of hydrochloric acid will also produce a turbidity in the bile which is due to the precipitation of lecithin, neutral fats, mucin, etc.

There is still some dispute as to whether ' B" bile is from the gall-bladder, however, it seems most probable that at least part of our "B" bile is from the gall-bladder. Whether magnesium sulphate acts as a hormone, the same as peptone, thus acting in accordance with Meltzer's law of contrary innervation or whether it is due to relaxation of the sphincter with syphonage, is a problem that still needs further investigation.

Einhorn claims it is the sulphate radical excreted by the liver with the bile, which gives us our change of pigment. This needs further proof before it can be accepted, because if this were true we would expect to find this dark pigment in all functionally active livers, and this is not true. He suggests it may be used as a liver function test, however, as yet I have seen no publication on the same.

In restimulation, the reappearance of dark bile need not be due to the added magnesium sulphate because the gall-bladder never completely empties itself. The contractile power of the gall-bladder is very small and it merely sends out small spurts of concentrated bile as it is needed for use.

Einhorn is correct in stating that one may get a change in color in some cases of cholecystectomized patients, but this may be due to a dilatation of the ducts. His article is a good one and gives food for new thought, however, more proof is needed before his facts are accepted.

I wish to report the following cases:

Case 1.—Mrs. A. H. Referred by Dr. G. Simanek. Medical drainage three days prior to operation showed "A" bile a light golden yellow; "B" bile a dark static bile; "C" bile a light, lemon yellow. Through the kindness of Dr. Simanek, I was permitted to pass a duodenal tube in the above patient before she was anaesthetized. She was then brought to the operating room, anaesthetized, and the usual gall-bladder incision made. The gall-bladder was exposed, and found to be fairly well distended, and before any exploration was made, 50 cc. of a 33⅓ per cent solution of magnesium sulphate solution was introduced directly into the duodenum through the duodenal tube. The suction bottles were applied in the usual manner, and in three minutes bile started to flow. In five minutes we started to get a real dark, golden bile (typical "B" bile) and the distended gall-bladder gradually collapsed. I might compare this to the collapse of a balloon when the air is released (no contraction was observed). The gall-bladder was then removed in the usual manner, and the bile in our collection bottle was apparently the same as that obtained from the removed gall-bladder, only in greater dilution. I grant that this was done under anaesthesia and hence open to some objection, however, I offer it for what it is worth.

Case 2.—Mrs. F. Referred by Dr. Simanek for medical drainage and treatment. On three successive medical drainages, only two types of bile were obtained, "A" and "C" bile. The case was referred back for operation as one not suitable for medical drainage. A diagnosis of stones, with probable obstruction of the cystic duct, was made. The duodenal tube was introduced before operation, as in the above case. The usual gall-bladder incision was made, the gall-bladder exposed, and a small contracted gall-bladder was seen. Fifty cubic centimeters of a 33⅓ per cent solution of magnesium sulphate solution was introduced into the duodenum through the duodenal tube. No static bile appeared in five minutes time, and the gall-bladder remained unchanged. The gall-bladder was then palpated and found to contain stones. It was removed in the usual manner, and on opening it, a stone was found, occluding the cystic duct.

Case 3.—Mrs. H. Age 35. From a history and examination a diagnosis of cholelithiasis was made. On several drainages we found that at times "B" bile was present and at times not. The duodenal tube was passed as in the above cases, and a moderate sized gall-bladder was exposed. We stimulated with magnesium sulphate, and no change took place. On light palpation, a stone in the cystic duct was found. This was easily pushed back, and "B" bile immediately appeared in our collection bottle, which was apparently the same as that found in the removed gall-bladder. There were several calculi present.

We feel that the use of the duodenal tube at operation is an aid in preventing postoperative vomiting of bile which is so often seen in cholecystectomies. The cases in which the tube has thus far been used, vomit less than in those in which no intubation was tried.

After giving the foregoing facts, the question which naturally arises is, "Of what real value is Medical Drainage?"

First of all, let us consider its diagnostic value:

1. It gives us definite information as to the patency of the ducts. If A, B and C biles are found, we can be reasonably sure there is no great obstruction to the ducts.

If on several drainages no "B" bile is found, an obstruction at, in or around the cystic duct may be found.

2. Macroscopic blood, and no bile on stimulation with magnesium sulphate, in conjunction with other physical signs, aids us in the diagnosis of malignancy.
3. Real dark "B" bile means biliary stasis. Enteroptotics can be placed under this heading.
4. Dark bile, with positive cultures, aids in the diagnosis of the type and location of our infection.
5. Gall bladder sand may aid in the diagnosis of stones.
6. In cholecystectomy with recurrent symptoms, we can determine as to the patency of the ducts, and whether or not infection is still present.
7. It is another means of locating foci of infection.
8. It aids in the diagnosis of typhoid carriers.
9. It can be used as an aid in the diagnosis of pancreatitis.
10. According to Palefski, it is an aid in visualization of the duodenum. A distorted duodenal curve denoting evidence of periduodenal adhesions.
11. It aids in diagnosis of certain types of headaches.
12. It assists in diagnosis of all lesions producing pain in the right upper quadrant.

Secondly, let us consider its therapeutic value:

1. It is an excellent aid for cholecystectomized patients with return of symptoms.
2. It is also an aid for hepatic drainage after operation before return of symptoms.
3. It benefits most cases of biliary stasis, if no obstruction to the ducts is found.
4. It may be used in all conditions where surgery is contraindicated—(A) old people, (B) heart cases, (C) diabetics, etc.
5. It may aid in clearing up typhoid carriers.
6. It hastens convalescence of catarrhal jaundice.
7. It aids some cases of stasis in pernicious anemia, hemolytic icterus, etc.
8. It benefits enteroptotics with pain in the right upper quadrant.
9. It may be used to obtain autogenous vaccines in foci found in the biliary tract.
10. It is of value as pre- and postoperative treatment in gall-bladder surgery.
11. It benefits so-called biliousness, migraine, lethargy, etc.
12. It is an aid in the treatment of pancreatitis.

Biliary drainage as a therapeutic agent, has its limitations, and everyone using it must be aware of them. Surgery is still the preferable means of attack in most biliary lesions, however, biliary drainage may aid in deciding that point, and I feel that Lyon deserves great credit for bringing this method so forcibly before the medical profession.

If from the history, physical findings, and X-ray examination, a diagnosis of cholelithiasis is made, it would be folly not to operate. If there is any mechanical obstruction to the ducts, surgery is indicated. If the infection is of long standing, both medical and surgical drainage is needed. If after six medical drainages no benefit is derived, surgical interference is necessary. Empyema and tumors are surgical. The cases that are to be surgical, must be left to the judgment of each physician.

I feel sure that biliary drainage will be a great aid in diagnosis of lesions in the upper right quadrant, and also a great aid as a therapeutic agent if used in a rational way.

In closing, I wish to express my gratitude for the aid of my co-workers, Drs. Howard, Traynor, Kelly, Russum, Levine, and also to the members of the Surgical Staff of St. Joseph's Hospital.

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DISCUSSION.

Dr. G. F. Simanek, Omaha:—I was very fortunate in cooperating with Dr. Sachs on most of these cases.

What we are mostly interested in, is the diagnosis, convalescence, and postoperative treatment.

We know we can drain the gall-bladder, as in the case stated by Dr. Sachs. But if you do, be sure that you feel the tip of the tube in proper position. Otherwise if you do not feel it there, and if it is in the stomach, you are not going to get the "B" bile. You will find men disagree because they are not sure they have the tube in the proper position.

Another case was where the stone was in the cystic duct, but by entering the abdomen, we moved the stone into the gall-bladder, and immediately the "B" bile started to flow. I think this is important, especially in cases of short duration. If we insert the tube and do not get "B" bile on three different attempts, we know we have something obstructing the cystic duct. We do something to show the patient we are right.

In postoperative cases, before we started to use this method, we would have patients vomiting bile. We put in the tube before the operation, and when we were through, we had the doctor lavage the duodenum, and those patients did nicely. There is no vomiting, and their convalescence is smooth.

In three months after the operations, many come back with indefinite pains in the right upper quadrant. We have been treating them in different ways. Many times we operate for adhesions, and they would recur. When they come back with these postoperative symptoms we usually drain them, and it is surprising how much they are relieved. A great many report every month or two, and we drain them and they feel better. We have tried it on several of these cases and it proved very satisfactory.

Dr. A. D. Dunn, Omaha.—We are under obligation to Dr. Sachs for bringing before us today a comprehensive discussion of the up-to-the minute subject of the Lyon-Meltzer non-surgical biliary drainage. We may expect a wave of "gall-bladder drainage" by the magnesium sulphate method to spread over the country, therefore we must be on our guard, to maintain the open mind and to remember that this method both in diagnosis and treatment is still in the experimental stage. I was pleased to hear Dr. Sachs use the word "supposedly" because from my own experiences I feel that the word "supposedly" is particularly applicable to whatever conclusions we may at the present time be disposed to draw from the data obtained by this method.

I wish to discuss only two features of the problem. First, the assumption of Meltzer that magnesium sulphate will not cause relaxation of the sphincter Oddi with contraction of the gall-bladder if the magnesium sulphate has passed over the mucus membrane of the stomach, may be questioned, if dark bile is taken as proof of such action. Lyon, basing his clinical experimentation on the Meltzer hypothesis has reasoned by analogy that the dark colored bile or second fraction in the A, B, C sequence is gall-bladder bile. The gall-bladder is frequently found at the operating and autopsy table to contain dark, thick bile, therefore, Lyon stated it as his "belief" that this dark, thick, or B fraction, is gall-bladder bile. For the sake of argument, we assumed in our first series of experiments that Lyon's A, B, C sequence represented duct, gall-bladder and liver bile. It did not seem rational that the magnesium sulphate should be so altered by its passage over the stomach mucosa as to make it entirely inactive when it reached the duodenum. To determine this question, we introduced the duodenal tube in the usual manner, confirming its location in many instances by the fluoroscope. With the tube in place we then had the patient drink 75 cc. to 100 cc. of 30% magnesium sulphate. We were able to obtain typical A, B, C sequences by this method in over forty instances. In fact, we have been about as successful in obtaining the A, B, C sequence by this method as by the introduction of the magnesium sulphate through the duodenal tube, although the technique is obviously more difficult. The quantity of the various fractions of bile has been just as great by this method. In order to ascertain whether the stomach contents had any effect on the activity of the magnesium sulphate, we made a 30% solution of magnesium sulphate in a stomach contents with a total acidity of 50. This was introduced into the duodenum through the tube and brought the A, B, C sequence. From our experiments we are convinced that just as effective emptying of the biliary tract can be obtained by taking magnesium sulphate by mouth as through a duodenal tube. If the test of the Meltzer hypothesis is dark bile of thicker consistency and higher specific gravity, the passage of the magnesium sulphate over the stomach mucosa satisfies this requisite. The second feature of the method that I wish to discuss is the question of whether the darker or B fraction is in reality gall-bladder bile at all. We have been fortunate in having a case for study in which a succession of surgical operations has culminated in the following condition: An hepato-duodenostomy with the hepatic duct anchored into the duodenum and the duodenum stitched to the under surface of the liver and a patient with neither gall-bladder nor common duct. The hepatic ducts were not found to be dilated at operation. A duodenal feeding catheter whose tip lay at the mouth of the hepatic ducts has been utilized for experimental purposes. We have found that the A, B, C sequence of bile can be obtained in this patient by the introduction of 30% magnesium sulphate through the duodenal catheter into the duodenum, into the stomach, and also when introduced at a point 32 cm. into the jejunum. A considerable number of observations have been made on this patient and in every instance we have been able to get the A, B, C sequence. We are convinced in this case and from other cases without a gall-bladder on which we have made observations, that we are not justified in assuming that the dark, or B fraction, represents gall-bladder bile. It may be that the dark bile is an effect of absorbed magnesium sulphate on the liver itself. Experimental work is under way to test this hypothesis.

It would seem that something of diagnostic and therapeutic value may come from the study of bile obtained through the duodenal tube by the magnesium sulphate and other methods. Chemical studies should be of especial importance. Bacteriological inferences will probably always be more or less uncertain.

I wish to reemphasize the importance of retaining the judicial mind in our diagnostic and therapeutic employment of the Lyon-Meltzer method of non-surgical biliary drainage. We owe Dr. Sachs a vote of thanks for his excellent presentation of this subject.

Dr. A. Sachs, Omaha—I wish to thank the gentlemen for their discussion.

The subject of biliary drainage is still in its infancy and as I stated in my paper, will undoubtedly need further work before being properly placed. That it is of value can no longer be questioned and those men claiming it of no value, either have not had sufficient cases to try it out fairly or have not properly interpreted results obtained.

I wish again to emphasize that it must be used in a rational and not hyperenthusiastic way.

We do not depend on color alone in determining "B" bile. It is necessary to examine the cytology and also in some cases our cholesterol determination has helped us considerably.

TRAUMATIC AND EFFORT HERNIA.

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No better augury for the settlement of differences between labor and capital can be found than the interest manifested by the employer in recent years in the physical welfare of his employee. This has recognized and acknowledged a mutuality of interests and greatly humanized the attitude of the employer toward the sick or injured wage earner.

Workmen's Compensation acts have for many years been operative in the large industrial countries of Europe. About 39 states in our union now have Compensation acts on their statute books and those states not having such acts are largely agricultural, or are states with few or minor industries which are not hazardous from either occupational or accidental disability. Good working conditions, reasonable hours of employment and accident insurance are labor's legal due from wealth accumulated by its toil. But there exists a moral obligation which the custodians of property are beginning to realize. The discharge of this obligation can not admit of either patronization or paternalism, both of which are abhorent to the American in any walk of life.

Whatever best serves the interest of the employee also best serves that of the employer. If this is to be the ideal relationship existing ultimately between the two contracting parties it will solve many of the problems now confronting the industrial surgeon. The doctor has no joy, as a rule, in arriving at, or uttering an opinion which will be used, not to benefit or cure those who are sick or injured, but merely to assess responsibility and quiet controversy between employer and employee. Biased and prejudiced medical testimony has in the past been common in personal liability cases. This has taught the injured employee to view with extreme suspicion the "Company Doctor" and, on the other hand, forced corporations to make efforts to prevent their injured employees from falling into the hands of the practitioner who hoped to make the size of his fee commensurate with the magnitude he could attach to the patient's injury. This sort of doctor considered corporations or insurance companies legitimate prey to be mulcted by both patient and doctor.

Fewer and fewer personal injury cases reach the courts. The disposition of all parties, employee, employer, and their respective attorneys, to be fair and moderate in demand and to accept competent medical opinion as a basis of settlement which serves both parties to the best advantage has opened an interesting and very commendable field of labor for the physician who interests himself in industrial, social, or medico-legal medicine.

Probably no question has given rise to more controversy between employer and employee than that of hernia and it is regrettable that such widely divergent views as to its etiology are held by competent surgeons. It is hardly to be expected that the number of claims for hernia arising out of accident or trauma will decrease until the profession itself reaches some accord as to the factors involved in its production and their relative importance. The successive and varied rulings of the Surgeon General's office on the selection of men with hernia, and whether or not these individuals were to be operated on after their selection is adequate testimony to the difficulty met with in successfully dealing with the herniated male.

For an individual employee to go to a court of law for adjudication of a liability claim arising out of the development of a hernia involves a loss of time and an expense he can ill afford when he can, if a favorable verdict is rendered, hope for only a very moderate judgment. With the passage of the Workmen's Compensation Laws in the several states many compensation claims began to be made on the basis of hernia being "an accident of labor." Workmen are almost universally of the opinion, and perhaps justly so, that their herniae are attributable to force or effort arising out of their employment. But many claims are willfully fraudulent in that they seek to exact compensation from an employer for a hernia which, if chargeable at all to unnatural effort or strain, is to be compensated for by some other corporation or individual.

Therefore, the employer who neglects to make physical examination of his men prior to employing them must expect to compensate for hernia which he is no wise legally responsible for, since the claimants statement that it occurred while in his employ, even though fraudulent, many times cannot be disproven. To quote from an article by the author ("Relation of Industrial Activity to the Development of Hernia"—Western Medical Review, July 1916) "To the unscrupulous claimant a hernia is an entity the existence of which cannot be denied. Neither, in his opinion, can its age be accurately determined, nor its cause definitely affirmed. In the last premise he is often correct. In this class of individuals the only error lies in getting caught." Certain facts in a history, even though obtained from the unwilling patient, and from one who does not cooperate, or deliberately misleads if he can, may aid in determining the age and cause of a hernia. These facts coupled with examination, especially a consideration of general musculature and other hernial orifices and, finally, the operative findings often satisfy the surgeon that a hernia does, or does not belong in the compensable class.

It is not the purpose of this paper to advance a theory or cause of hernia. It is, in a measure, to evaluate the different factors that may enter into its development and also to present certain data gathered from a series of cases of inguinal hernia in young men in military service most of whom were between the ages of 21 and 31 years. About one half of 94 cases were operated upon personally and the remainder were observed as first assistant. The data is thought to be of special value as regards certain points brought out in the histories, for the soldiers had no motive in making a dishonest declaration in most cases and if it were thought an attempt was made, for some unknown reason, to falsify in the history the case was not included in the series.

Traumatic Hernia: It is not disputed that such a condition as traumatic hernia exists. Chiefly, the dispute centers around how extensively the definition shall apply. As commonly defined it is a hernia following direct or proximate trauma at the site of such trauma, usually accompanied by local evidence of injury such as ecchymosis, swelling, tenderness, etc. This class of cases is necessarily very small and there can be no doubt of the compensability. In the series under consideration four cases were said to be due to direct violence to the inguinal region, one of them having suffered the supposed violence four days previously, striking his groin against a seat corner in a passenger coach when en route to camp. The hernia when operated upon was by all criteria a recent one, with a thin glistening non-adherent sac, but no evidence of direct trauma.

The above definition, however, covers only a very small portion of the cases for which compensation is claimed. Coley broadens it by admitting those cases, "from an indirect application of force causing greatly increased intra-abdominal pressure, "i, e, some direct force, such as a blow from a heavy object or the traversing of the abdomen by a wheel of a vehicle. If such accident be followed by hernia, though the violence did not reach the site of the protrusion, such hernia may be called traumatic, and the individual entitled to compensation, though operation determines the presence of a socalled congenital sac, that is, an open tunica vaginalis.

I do not believe that an injury to be established as a factor in the development of hernia should, necessarily, present external evidence of violence nor should it be denied as causative if no pain or tenderness is complained of at the time of accident. Violent and sudden application of force to the abdomen causes sudden and great increase in the intra-abdominal pressure quite sufficient to be considered etiological without qualification as to local evidence and as to the site of injury.

Effort Hernia: If we assume all traumatic hernia are compensable, there remains a group about which the greatest controversy centers, so called "effort hernia." (Accidental, or Sudden Hernia.) This class of cases includes those herniae that are alleged to be due to various agencies, which increase intra-abdominal tension and are the herniae warranting close investigation before decision as to whether or not they are compensable. I think the term "effort hernia" more accurately describes the condition than either of the other two. They are not accidental in the sense of direct application of violence to the tissues by outside agency. They are not sudden, for in the absence of direct trauma above referred to, herniae are not thought to develop suddenly but rather gradually until they attain such size as makes them apparent to the eye. Pain or deformity are the conditions that nearly always notify those who are ill of their disease and no exception exists in herniae. We must always keep in mind that the particular act or circumstance to which the hernia is attributed may have only enlarged a pre-existent hernia sufficiently to make it noticeable to the patient. By demanding compensation in such a case the claimant unwittingly does an injustice to his employer, but industrial commissions and courts have held in the majority of cases that a hernia manifesting itself and diagnosed while the claimant is in the employ of an individual or corporation is compensable by that employer. This is often in direct contravention of the opinion held by competent surgeons in individual cases. A fair judgment can be arrived at only by a complete history, a thorough examination and careful estimation of data obtained at operation. These facts will enable one to estimate accurately the amount of predisposition existing which, after all, should determine whether or not the hernia is compensable. It is from this viewpoint that the following data will be discussed.

Age: The average age of the series of cases was 24 years, the youngest 18 and the oldest 40. Most herniae appear, of course, in the first five years of life. These, in a great majority of cases, are congenital. (Between the ages of 5 and 30 years there is a marked decrease in its evidence; after 30 years, it begins to increase and reaches the second highest rate at 45 years.) The arbitrary limitations of age in this series makes discussion from this standpoint profitless. It is proper to note, however, that a hernia appearing in the latter years of life, (from 50 upward) assuming that there has been no change in the character of work engaged in shortly before its development, would rule out, in a large degree, any marked congenital predisposition to hernia or such disposition would have initiated a hernia in earlier years. On the other hand there appear with age certain manifestions of senility such as a general muscular hypotonicity and relaxation of tendinous and aponeurotic attachments which invariably lesson the security of the individual against hernia. From 55 to 70 years herniae are very common.

Occupation: Industrial surgeons as a rule find that those engaged in heavy labor are very often sufferers from hernia. Of this series of cases 15 were engaged in occupations of the variety requiring little physical effort, chiefly clerks and salesmen. It could not but be noticed that many of these men alleged that their herniae appeared very soon after entering the service and attributed it to the entire change in their routine of life, such as drilling, setting up exercises, etc., muscular effort and unusual physical activities to which they were entirely unaccustomed. Men recruited from the above walks of life gave a history of average duration of hernia of about 3 years while the average for the entire series was 7½ years.

Out of these 15 cases, 5 showed thin glistening sacs with no adhesions, evidently recent protrusions. One case only was congenital.

If one encounters large numbers of men suddenly removed from home and ordinary routine with an entire environmental change he is struck with the number of deviations from the normal in anatomy and physiology which nature previously had been content to ignore, or had been able to compensate for but which now manifest themselves symptomatically. Enlarged turbinates and deviated septa become troublesome. Scoliotic backs become painful. Mild flat feet commence to ache and enlarged hernial orifices become still larger, or unoccupied peritoneal sacs receive a tenant. There is no doubt that many hernial sacs previously unoccupied are recognized or become true hernia when a sudden strain is thrown on the unaccustomed and unprepared abdominal musculature such as happens when the sedentary and unathletic man becomes active physically.

Family History: In alleged industrial hernia inquiry should always be made of family history. 64 out of 94, or 67% of the cases under consideration gave no family history of hernia. Berger states that "in 130 cases of hernia examined in Paris supposed to be due to accident not one gave a history of heredity." In this series out of 32 cases supposed to be due to accident 8, or 25% gave a history of heredity. (Berger's cases represented herniae discovered, not in soldiers, but in industrial workers in Paris who claimed compensation). Two sufferers had grandfathers likewise afflicted and one of these individuals was suffering from a complete left inguinal hernia of ten months duration with a large ring on the other side. The other individual attributed his hernia to a kick in the groin. One patient whose father and two brothers were suffering from hernia had a double inguinal hernia, one side complete. Another whose two brothers had hernia, was suffering from a double congenital hernia. There seems to be a family predisposition in many cases. I recall distinctly two brothers of the poorer class of whites from the southern states whose general bodily conformation, with stooped shoulders, pouting lower abdomen and general muscular flabbiness was impressive. Both suffered from double inguinal hernia.

Previous Illnesses: These are chiefly three, acute or a severe chronic cough, constipation and urinary obstruction. I do not believe that illnesses in early childhood or pubescence are given the consideration they deserve as causative factors. I refer especially to those that cause repeated and intermittent increases in the intra-abdominal tension over a considerable period of time. These diseases include, of course, more particularly whooping cough. 34 cases, or 36% gave a history of whooping cough. If a predisposition exists an attack of pertussis in childhood accentuates such predisposition or actually develops the hernia. Four cases, or 4.3% gave a history of pneumonia just before the appearance of hernia and one, an asthmatic, stated his hernia appeared during a paroxysm of coughing. 13 cases of the series were chronically constipated but none gave a history of noticing the hernia directly following straining at stool. Previous venereal disease is of interest chiefly as gonorrhoea tends to develop urethral stricture and straining at urination. Four patients, all colored, admitted stricture and six more admitted a gonococcic infection at one time. These particular statistics I do not regard as reliable because of the soldiers fear of consequences (largely unfounded) of admitting venereal disease and the desire to have nowhere in the army records any history of such disease.

All of us are acquainted with the prostatic who develops late hernia following his continuous efforts to empty his bladder. Many of us have seen urethral stricture complicated with hernia in which the patient said it appeared on an occasion when he was suffering from retention, or near retention. Industrial surgeons should always keep in mind that there are conditions responsible for marked increase in intra-abdominal tension which are beyond controversy factors in the production of hernia but which are in no way associated with labor or occupational duties.

Previous Operations: Only two cases gave a history of operation previously for conditions other than that of hernia. One of these was a double decapsulation of the kidney which very probably could not have influenced the development of the hernia. The other case had been operated upon for suppurative appendicitis through a right rectus incision. There was no incisional hernia and I do not believe the development of the inguinal hernia was in any way influenced by the previous operation. The McBurney incision if carelessly carried out may sacrifice the ilio hypogastric nerve. Balfour of the Mayo clinic and Davis of Philadelphia have given it as their opinion that such sacrifice may, through trophic alterations in the adbominal musculature, be a factor in the production of inguinal hernia. I have seen a case in which I believe this factor in all probability entered into the development of hernia.

Moschowitz and Neuhof (Annals of Surgery, July 1917) maintain the nerve is purely sensory and cannot, if the assumption be correct, influence an operative result one way or the other as regards final cure. Any scar in the inguinal region could conceivably influence the development of hernia, especially if the scar be large and deep. I recall a large scar resulting from the incision of a venereal inguinal bubo involving chiefly the external oblique in which evidently the ulceration had been phagodenic in character for it left a very extensive scar extending up over the internal ring. I believe this played an important part in the subsequent development of hernia.

Side On Which Hernia Occurs: 42 cases were upon the right side, 30 on the left and 22 were double. In 9 of those that were double the hernia had been present since birth and of these 5 had what we ordinarily call a congenital sac, that is an open tunica vaginalis on both sides. Of the remaining cases of double hernia 6 were not aware of the presence of hernia on either side until submitting to overseas examination when they were told by the medical officer they were suffering from a hernia. All 6 of these men were new recruits and had been engaged in clerical work which was of such a nature as to not appreciably enlarge an existing hernia and make it painful nor in any way call it to their attention. None of these herniae was large but all had well marked sacs. Double hernia to my mind indicates predisposition and should be a factor taken into consideration in deciding compensability.

Cause: No inducement could exist in this series of cases for a dishonest statement as cause of hernia and I believe the statements as given represent the patient's opinion as to the cause, though for reasons enumerated some are in reality inaccurate. In a few of the cases the supposed cause of the hernia rested on nothing more substantial than a parent's statement that it was thought to be due to such and such cause, or upon a conviction of the patient, often unwarranted and entirely unfounded, that it followed an extremely improbable etiologic factor. Fifty five out of the 94 cases responding to the question as to what caused the rupture answered unqualifiedly they did not know. The remaining cases all attributed it to some unusual effort or strain. Out of the remaining 39 cases of hernia 35 alleged effort as a cause but in only 24 would the history warrant the classification of effort hernia. In only 11 of these could any direct connection be traced between any effort and the hernia. Most of these who complained of pain at the time of the alleged development of hernia noticed it within a few hours, or a few days later while those who experienced no pain did not notice it for several days or weeks later.

We know that practically all industrial workers who have hernia assert its compensability. I have gone carefully over these histories, keeping in mind the fact that it was not necessary for the herniated individual about to have his hernia repaired to falsely represent its cause. In this series of cases 67 were engaged in industrial pursuits and might reasonably have been expected at some time in civilian life to have made claim for compensation. Of these 67 men only 20 alleged effort or trauma as a cause and in 15 cases this occurred in youth before they had reached the wage earning age. So out of 67 sufferers from hernia in the industrial walks of life only 5 claimed effort attributable to their employment as a cause, a much lower percentage than we encounter in histories given in civilian practice.

Surgeons sometimes are disposed to deny compensation to all classes of hernia except that class which is clearly traumatic. They allow none to effort hernia. The contention that all herniae are congenital except those that are clearly traumatic may be true. It may further be established, in an individual case, that the sac was preformed and that great predisposition existed. However, occasions may arise in which a workman, by some unusual effort or strain may cause a previously existing hernial sac to receive a content and thereby, in such cases, avert other more serious accident to himself or fellow workman. For instance, the securing or maintaining hold of falling lumber, or metal may throw a sudden strain on his muscles and thus find an occupant for an open hernial sac, but save the life or limb of the fellow laborer. Is it fair to deny compensation on the ground that his hernia is congenital, or that sufficient predisposition existed to deny him compensation?

Duration: Average duration 7½ years, complete 12½ years, incomplete 5 years. One complete gave a history ten months cause unknown.

It was interesting to compare the soldiers statements as to the length of time their herniae had existed with the operative findings. Twelve men said their herniae had existed since birth and in all of these an open tunica vaginalis was found, indicating the sac was of congenital origin containing contents apparenty long domiciled there. There were 5 cases of the same type of sac which gave a history of recent development of hernia. The content of the sac in these cases was non-adherent. In many cases histories were given of a recent development in which the sac was thick and adherent to the cord, omentum or bowel; indicating beyond all doubt a tenancy much longer than the patient had knowledge of. I believe that these represented herniae long existing but so small that the sufferer was not cognizant of their presence, which rather quickly became large enough to cause pain or swelling, their detection and report by the sufferer as recent herniae when in reality they had been long existent.

We can not repeat too often that finding a hernia merely reveals its presence and does not determine its age. Six such cases were men not aware they had hernia until undergoing overseas examination and all of these 6 had thick sacs filled with adherent omentum.

Recurrences: Only three of the entire series were recurrent. One of these with a congenital sac, presented a badly located scar in the inguinal region and the operation for the recurrence, which I did myself, revealed the sac had never been located and apparently no honest effort made at repair. In one case the recurrence was direct following a transplantation operation. The great majority of recurrent hernia cases were not admitted to military service and I believe wisely so. Recurrences, as we all know, are not always the result of a poorly conceived, or an improperly executed operation, but rather of a congenital deficiency in the structures necessary to prevent a hernia developing in the first place and as a corollary the same deficiency when an attempt is made to repair the hernia.

Of this class of cases (those with regional anatomical deficiencies) reasonable hope of a successful outcome from an operation may be offered if the patient can so order his life as to obviate the factors productive of recurrence, that is sudden increase in intra-abdominal tension. The exigencies of military service, however, whatever the branch, often permit of no consideration of the normal body or its needs much less the one diseased or crippled.

Bloodgood described early in 1918 a hernia, commonly direct, found in individuals in whom there seemed to be an absence of the conjoined tendon. This is very apt to recur following operation. The examiner on invaginating the canal can hook the index finger over the pubic bone meeting with no muscular obstruction. In examining several hundred cases of hernia I was able to discover in only one case what I consider to fulfil in every degree the description by Bloodgood.

Recurrences following primary herniotomy properly performed by a skilled surgeon are so small in number that they may be given little weight in considering the advisability of surgical repair.

Trusses: 21 out of 94 cases were wearing, or had worn at some time, a truss. Though many brought such appliances to camp with them I found one man still wearing his truss when he reported for operation. The usual reason for discarding them was that they were uncomfortable and conspicuous with the tightly fitting uniform and besides they found they would not properly retain the hernia during setting up exercises, horse back riding, etc. Others gave a history of having worn them only a short time, discarding them because they were uncomfortable and more painful than the hernia itself. The average man will not wear a truss when operation offers almost sure and permanent relief. Occasionally one meets a herniated male who says he prefers a truss to an operation and that the truss does not pain him and that he does full labor wearing it. It has been proved that sufferers from hernia have about 25% disability and I do not believe that any truss, however well fitted, removes nearly all of that disability. In the contraindications for operation (which will not be taken up) a truss may often be prescribed and worn with benefit.

Size of Inguinal Rings: Of these 94 cases, 32 were regarded as having a large external ring. Some authorities have laid great stress upon this condition. Invagination of the canal is much more satisfactory and determination of the presence and type of hernia much easier with such rings. I do believe the size of the external ring argues for, or against predisposition to hernia.

Large internal rings are much more worthy of attention. Many cases were sent into the base hospital from camp infirmaries with the diagnosis of hernia in whom nothing more than a large internal ring could be found. As a rule herniotomy was not performed in these cases.

Mock says—" I have never been able to definitely diagnose a large internal ring without finding a hernia present." I personally have often found a hernia on one side with a large internal ring on the other side though no hernia on this latter side could be found. Some men asserted a hernia or protrusion appeared on straining and though one detected no definite impulse on coughing, operation revealed a very slight dimpling of the peritoneum at the interinal ring. To me a hernia on one side, with a large internal ring on the other side, argues for close scrutiny of compensation claim for hernia. Very important, I think, is the bulging of the floor indicating a tendency to direct hernia which is often overlooked.

General Musculature: 43 men were classed as having good general muscular development, 27 as fair, 12 as poor and 12 as very poor. Practically all of the farmers from the north and middle west were of excellent general musculature. Those classed as poor and very poor were chiefly factory hands from the New England States and farmers from the south. Negroes, as a rule, were magnificently developed as to general musculature. There is a class of youth, tall, thin, stooped, flat chested, narrow flanked with a sunken epigastrium and protuberant lower abdomen who often develops hernia and usually a double hernia. Nearly always he is moderately anaemic and markedly visceroptotic with long mesenteric attachments. Possibly this latter itself may have something to do with development of hernia. These individuals are normally potbellied but on coughing or straining one is surprised to see how little muscular development there is in the abdominal wall. It is as thin and relaxed as that of the woman who has borne several children. I believe this individual is predisposed to hernia to a degree which unless it were traumatic, would make it extremely doubtful if a hernia were compensable.

From this statement may be deduced an excellent reason for a review of the employee's general physical make up and capabilities at the time of employment, as well as at frequent intervals thereafter. Inevitably if men of the above type are put at heavy manual labor many will develop hernia and a large number of these herniae will undoubtedly be classed as compensable, as what for a normally muscled man would not be undue strain or unnatural effort will, for this type of individual, be much more than his poorly protected hernial roadsteads can stand.

Both Mock and Hopkins of Chicago point out that they have often found hernia among the Greeks and southern Italians and deduce therefrom that it is common among those doing heavy manual labor. The nationalities spoken of, in America, as a rule, do the heaviest of manual labor and remain at it because their education and training permits them to do nothing else.

Complete or Incomplete: Nineteen out of 94 herniae were complete. The remainder were incomplete. If we eliminate those that appeared at birth, in the complete hernia, the average duration was eight and a half years and the average age of the sufferers was 23 years. It is safe to say that a great majority of cases of scrotal hernia is of considerable duration unless we except the rather aged individuals in whom we might, because of general hypotonicity of tissue, expect the rapid development of a complete hernia.

Direct and Indirect: Only two herniae out of the entire series were direct. Of course, most of the hernia due to direct or proximate trauma are direct in nature. Neither of these cases gave trauma as a cause. In both the etiology was classified as unknown and the duration was four years and six years respectively. One was a recurrent hernia first operated seven years previously and recurrent two years later. There was infection at the time of operation. Most recurrences are of the direct type and most recurrences take place in direct hernia.

Reducible: All the cases were reducible at the time of operation though three had at one or more times been irreducible.

Strangulated: None of the herniae in the series was strangulated at the time of operation because most of the men were sent in as soon as the hernia was discovered, usually at venereal inspection. It is true that most herniae which become strangulated are of some duration but strangulation does not necessarily define the hernia as being an old one. The type of hernia that might be traumatic, i. e. the quickly developing one, could easily push a piece of omentum or bowel through a small and elastic internal ring and quickly strangulate it.

Congenital: By congenital hernia in this discussion is meant one showing a plainly congenital sac or open tunica vaginalis. Seventeen, or 18% in all were congenital and the average duration of the congenital cases was 17 years. There were 8 colored men in the series, 4 of whom had congenital hernia. There were 12 cases who gave a history of hernia from birth and all of these had plainly congenital sacs. One individual had double congenital hernia one of which he attributed to trauma, the other to unknown cause. Another double congenital hernia was attributed to an effort occurring twelve years previously. Wide sacs such as those that are open all the way down the tunica vaginalis are plainly congenital and indicate such a marked predisposition that they are rarely compensable.

Complications: Varicocele has been mentioned by Moschovitz as a predisposing cause of hernia. The enlargement of the cord, according to his statement causes "temporary dilatation with a further weakening of the internal inguinal ring." It seems hardly possible to me that this could materially influence the development of the hernia since as he says once more "nature has been rather profligate in her dimensions and has made the hiatus in the intra-abdominal fascia more than ample to account for their transmission," referring to the vessels of the cord. This refutes his own argument.

It seems to me that a hernia, especially if large, and down most of the time, by pressure on the veins and interference with the return circulation might more reasonably be thought a contributing factor in the development of varicocele and not the varicocele contributory to the hernia. Three herniae were complicated with left varicocele, though only two of the herniae were on the left side. The average duration of varicocele was 16 years. Four of the herniae were complicated with hydrocele, two of these were hydrocele of the cord. One individual suffered from a double congenital hernia and a double hydrocele of the cord. The average duration of a hernia complicated by hydrocele was 18 years. It would seem to the writer that a hydrocele, if large, and especially hydrocele of the cord markedly predisposes to hernia as it acts as a hydrostatic bag or wedge constantly tending to dilate the ring.

Of course most of the cryptorchids were rejected for military service and only one case was complicated by cryptorchism. This case presented what was apparently a recent hernia (history of 20 years) with an atrophic and very soft testis lying entirely outside of the canal just above the symphysis pubis. The great majority of hernia complicated by undescended testis is of congenital origin, and such are nearly always held not to be compensable since nature's failure to properly buttress the internal ring is so evident and the predisposition so plain as to make it difficult to attribute effort or unnatural cause what is clearly to be charged to developmental imperfection, or natural cause.

Types of Operation: Seventy four of the 94 cases of hernia were repaired by various modifications of the Bassini operation. In some cases the Andrews operation was done and in others the Ferguson. The merits of the different types of operation will not be discussed here. None of the cases could be followed long enough, of course, to determine the total number of recurrences and the percentage in each type of operation. It was noticed that there were more postoperative complications following the Bassini than other types of operation. This complication was chiefly orchitis and depended, in a measure, on the skill of the operator and more so on the size of the hernia, i. e., whether it was large or small, and whether or not the sac was of the congenital variety.

The men were allowed out of bed in twelve to fourteen days, discharged from the hospital at the end of twenty-one days with advice to their commanding officer to assign them to light duty for another month.

All of us have had men upon whom we have made a hernia operation report back repeatedly complaining of pain at the site of operation and a sense of weakness in this region, some even insisting that a recurrence was present when none existed. If a recurrence is present it can be definitely determined but often it is difficult to properly evaluate the pain complained of. One can not deny its existence. Scars, operative, or of other etiology, are sometimes painful. I satisfied myself that the great majority of cases of pain following herniotomy in this series should be assessed to a wilful intent, or a subconscious hope to escape all duty, or unpleasant parts of it and chief of all the hope that foreign service could be evaded. Those men who were striving for warrants or seeking commissions rarely complained of pain following operation. Those who were shirkers and feared they would be sent overseas, or be put in combat organizations used every subterfuge to escape arduous and hazardous service. They complained of joint pains, backache, testicular neuralgia, etc.

In industrial hernia the same classes of men are encountered. There are those who return to work early and who never complain and there are those who attempt to prolong their disability by every sort of complaint and every manner of deception. I had opportunity to examine and question overseas many soldiers operated on for hernia in the states, two of whom I had operated upon myself. But very few said their hernia gave any trouble, even though they had done active front line duty.

One of our cobelligerents had so much trouble in the latter time of war with operated hernia cases that it is my understanding they ceased to operate on such cases. The men were fitted with trusses and assigned to duty that would be permitted under such circumstances.

Modern war had so much of the drab, dirty and dangerous about it, and so little of the old time glitter, glamour and glory that any human animal, after a few turns of the real work done up at the front can, in good conscience, use most any subterfuge to escape for a rest in camp or hospital.

A RATIONAL VIEWPOINT IN THE PRACTICE OF MEDICINE.*

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For the highest ideals of medical practice the physician of today, so far as his medical training is concerned, must have a very different outlook from the graduate of even twenty years ago. The reduction in the number of medical schools has reduced the number of medical students and medical graduates, but it has notably increased the efficiency of the training of these graduates. As medical knowledge increases, the armamentarium of the physician will be correspondingly increased, and more rapid and more accurate results will be expected. To enter upon the practice of medicine today, unless one has served an acceptable internship of at least one year, is practically impossible. The number of graduates who are pursuing a two or three-year internship is constantly increasing. In other words, more and more, of necessity, is being invested by the medical graduate in himself to meet the demands of modern practice. No profession other than medicine requires in preparation so much arduous labor and such a tremendous expenditure of time. A four year high school course, plus two years of academic college work, plus four years of straight medical work, plus at least one year of internship, plus an apprenticeship or an association with an older man, must precede the earning years. All these years are unproductive financially, and at the end of this time, if the individual has retained his health and courage, he may demand a reasonable financial return for his services. Many of our most successful men enter business life with little more than an eighth grade education. After completing the grammar school the physician must spend eleven or more years on expense, plus the loss of earning power, before he is permitted to anticipate an income.

The fundamental duty of the physician is to restore the sick to health. Refinements of diagnosis are important only as guides to safer and more direct therapeutic procedures. The physician unable to devote intensive study to his case often clouds his ignorance by referring the case for a multitude of X-ray examinations, blood chemical determinations and the like. No galaxy of shining apparatus will restore to health other than the functional neurotic. The passing of the old time physician who sat by the bedside and gleaned a volume of important clinical information by keen, persistent observation is to be deplored. There is a definite tendency on the part of modern physicians to neglect a routine case because it lacks interest, and to study intensively those rare scientific entities that give promise of mental stimulus. After all, the success and the standing of the medical profession depends primarily upon the ability of the profession to relieve suffering, and secondarily to advance scientific medicine.

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The growth and prosperity of pseudo-medical cults is due first of all to the failures of the medical profession with the functional neurotic and secondarily to mistakes in diagnosis and treatment. People call upon the physician for relief. If this relief is not forthcoming within a reasonable time, the patient seeks other sources of health. Hence, the visit to the "path" physician. There has been neglect in general practice of the use of mechanotherapy, hydrotherapy, scientific massage and the like. These valuable therapeutic aids have fallen by the wayside in the general practice of medicine, but have been eagerly seized upon by the cults and in their hands have met with some success. To illustrate: a prominent young business man went to physician "A", his family physician, because he was feeling below par. He was given the routine office examination, blood, urine, X-ray of teeth, a general physical examination, etc., and was dismissed with the statement that there was nothing wrong other than that he was overworked and needed a rest. Two months later, unimproved, he visited physician "B," a prominent internist. He was gone over in great detail, the examinations covering a period of ten days. His bill to the internist and referred specialists was over $100.00. He was again dismissed with the statement that there was nothing wrong; that he was overworked and needed a rest. He left home and spent three months in California, returning unimproved. His next visit was to a popular "path" physician. This individual treated the case for over a year. Noting, however, the last month or two a rather sharp drop in his weight, the patient again visited his family physician. On this visit, an incurable malady was discovered. It is reasonable to suppose, knowing the diagnosis, that had physician "A" or "B" determined the condition, the patient could have been restored to health with normal prospects of life. The clinical observations of physicians "A" and "B" were faulty; their laboratory examinations were accurate, but furnished no information. The clinical history, if it had been gone into carefully, would have furnished a clue and a few careful clinical observations would have confirmed the diagnosis. Should the physician be satisfied with negative evidence? There is little doubt that the patient, if told that his condition is not clear on first examination, will return again and again for further observation and the causative factor thus be discovered at a much earlier date.

Group practice has come to stay and will ultimately result in greatly improved medicine and surgery. In the first place, better business methods will be inaugurated. This does not mean high finance, with a minimum fee of $100.00 or more for a complete examination. It does mean, however, with the internist as the hub of the group, that cases will be referred to other members of the group for special examinations, only when specifically and definitely indicated. These examinations will be charged for on a value basis. There will be frequent meetings of the group staff for discussion of all cases, and the patient will receive the benefit of the staff advice. There is a distinct economic saving in a group association. The combined office force is much smaller and generally more efficient. Individual expense is reduced and important equipment which the individual physician might not install is, for the group, a minor consideration. Medicine and surgery is bound to advance more rapidly under group practice, providing accurate clinical histories and accurate clinical observations remain the rule. No man is sufficient unto himself. The stimulus and inspiration derived from close association, the suggestions of colleagues, all will make for better diagnoses, and more rational treatment.

In order to add to the sum total of human knowledge of disease and receive the stimulus of medical research, the practitioner should keep in close touch with some center of medical teaching. This does not mean necessarily the attendance upon so-called postgraduate courses offered by advertised postgraduate schools, but it means that the practitioner should for one or two weeks out of each year visit some center of medical teaching, become acquainted with the staff, visit the classes, laboratories and clinics and follow the staff members on ward walks. This will prove a real vacation and a profitable one. Ideas long dormant will be awakened and new ones acquired. There will be the feeling of good fellowship, of acquaintanceship and a common purpose, and the practitioner is bound to return to his field of labor broader, more capable and more valuable to his patients. Institution of medical teaching, because there both the new and the old will be found, the new being tried for its possible value and the old adhered to because of known value. Visits of this kind will serve to orient the practitioner in his evaluation of diagnostic and therapeutic procedures. He will be less constrained to accept new ideas at 100% and more loath to give up older procedures of proven clinical value. Some physicians tell their patients that the entire basis of disease is a focal infection. Disease due to focal infection has been recognized for decades. It has a new dress, it is now being placed conspicuously in the spotlight and much good is resulting from a concentration of medical attention upon this important etiological factor. On the other hand, the pendulum always swings too far. The doctrine of focal infection is receiving too much credit or too much blame. Perfectly good teeth are being sacrificed. Sinuses are being drained unnecessarily. Brilliant results in some cases cannot justify a rule of procedure. An antrum filled with pus should be drained. Teeth with apical abscesses should be removed, but in the far swing of the pendulum good ordinary clinical judgment must be exercised. Blood chemistry is a distinct advance, and properly interpreted is of great assistance to the internist. Its failure lies in the inability of the internist to read blood chemistry findings and apply them to the case. Complete chemical examinations of the blood are of great scientific interest. They have, however, only specialized clinical significance or application. Blood sugar determinations must be correlated with carbohydrate feeding as to time and amount. Total blood nonprotein nitrogen gives no factor of essential value over blood urea and uric acid. Basal metabolism interpretations must be made repeatedly in order to furnish accurate information, each determination to be viewed in the light of rest, nervous stimuli, food intake, etc.

One is not alone in the opinion that a knowledge of physiology determines the efficiency of the internist, much as a knowledge of anatomy and pathology effectually rates the success of the surgeon. Symptoms are a manifestation of perverted physiology and their proper interpretation must rest, therefore, upon a knowledge of the normal. As far as may be determined, for a biological science, physiology is approaching the exact. For one to interpret symptoms in the terms of abnormal physiology is to know pathology.

Too early specialization is apt to breed medical monstrosities. The specialist who has received a general grounding in medicine and surgery will ultimately go far in advance, of the equally capable practitioner without this general training. A specialist should be able to view the patient from every possible angle and especially from that of the internist. This leads to the dictum that every internist should acquire the technique of many special types of examination, such as ability to view with accuracy the fundus and to interpret the findings; to measure the swelling of the disc, etc. He should be enough of a neurologist and psychiatrist to differentiate organic from functional disorders accurately and his knowledge of physical diagnosis should include a complete neurological routine. Every specialist should have ready access to a competent internist, that symptoms having a general organic basis shall be given their proper interpretation. This is a plea largely for the treatment of the patient as an organic entity rather than as a specimen exhibiting to various groups of specialists peculiar and interesting phenomena. Overenthusiasm in a specialist is a pitfall. It amounts to self delusion,—auto hypnotism,—as the results of certain procedures which he, the specialist, has inaugurated and which, from his point of view, solve most medical problems.

In many quarters, particularly among keen business men, there is a mild contempt for medicine as a profession. It is due not so much to failures incident to medical practice as to poor business methods on the part of the practitioner. No business of any proportion could possibly survive bankruptcy conducted along lines of present day medical practice. The profession is beginning to realize this and changes looking toward improved business methods are taking place. The physician invests in himself a capital of from thirty to fifty thousand dollars. This capital must yield a profit, carry an overhead and be capable of a complete turnover at short intervals. The physician has as definite a commodity to deliver as has the grocer or the dry goods merchant. For several generations professional idealism has apparently dictated the policy of laissé faire in business matters. For a physician to continue this attitude is to invite the contempt of the business man with an increasing general reduction in his influence in the community. Medical service must be charged for at a compensatory fee and the patient must be made to pay.

As a prerequisite to accurate clinical observation there is, of course, the accurate clinical history. This should be taken and recorded in a careful manner, omitting no system and then studied in detail. No modern laboratory can replace the accurate clinical observations of a Graves, a Charcot, a Trousseau, a Corrigan or a Paget. With modern laboratory methods so ready of access and with time so short, we are apt to forget the relative value of bedside study. The classics on symptomatology and their interpretation have been written by the world's greatest clinical observers. If laboratory and clinical findings do not agree, the safe rule is to follow the clinical. Too great reliance upon laboratory findings submerges the personality of the physician. The keenness of his observation fails because of disuse and he becomes in a sense a mechanical interpreter of the work of others. A rational weighing, however, of all clinical pathological data is the ultimate desideratum, placing all laboratory and technical procedures in a proper category. In no sense should the value of all effective laboratory procedures be minimized; they are indispensable, but improperly interpreted, useless. The competent, conscientious X-ray specialist is a boon to the practitioner. He is neither extravagant in his promises nor dogmatic in his findings. There should be a more intensive study of the applications of laboratory methods, of their meaning and significance.

The emphasis therefore must be placed upon the Art as well as the Science of medicine if there is to result a skillful interpretation, accurate delineation and proper evaluation of all phases of the morbid individual.

That faculty known as common sense or judgment; a rational, logical mode of thought, must hold the helm in medical practice. Otherwise, a heterogeneous system will result. Judgment and ability to think come to some early, to others late and to still others, not at all. A profession imbued with fundamental honesty of purpose, with high ideals of real service is what the people demand. Unfortunate experiences with incompetent medical practitioners breed medical agnosticism and a contempt for a noble profession.

DISCUSSION.

Dr. E. W. Rowe, Omaha.—I consider it a privilege and an honor to be asked to open this discussion. There is probably no one in the State any more suited to discuss a problem in medical economics than the Dean of the University of Nebraska College of Medicine. He occupies a peculiar position in the medical profession in that he is a teacher, not so much of the science, but of the economics of medicine.

The first point I have to make is this: The greatest service the medical profession can offer to society is a high type of social service. There are other workers in social service. There is the minister, who is trying to overcome sin in the world, and helps build the churches. Then there are the so-called social workers, strictly speaking, who want to overcome the ills of the world, and build almshouses. Then there is a type of social worker who is trying to relieve the sickness of the community, and he is the physician. Then we have the type who is trying to overcome the ignorance of the world, and he is the schoolmaster. They build schoolhouses.

One of the most important is the physician, and because he occupies this peculiar position in the world of being strictly in the world for service to the community, he has no right to expect to commercialize his profession or ask for more than a decent living, payment for his education, and all that is necessary to keep him in the proper dignity of his profession.

Another point is this: We hear a great deal about the change in the practice of medicine—the passing of the family physician, and all that. There is no reason why there should be any change in the ideals of the medical profession. I do not believe the modern medical practitioner needs to become more commercial than in the past. But we want to look into the causes for this change in the type of medical practitioner which is due to a rapid change in the science of medicine as applied to practice.

If you go back into the latter half of the last century of the history of medicine, you will recall the discovery of the cell theory of pathology, followed by the developments in bacteriology and application by Lister and Pasteur. They brought about a great change in the science of medicine, and for a while it ran ahead of the art. We had a medical profession which overemphasized the laboratory for a while, and there was a long time before the gap closed between the science and art. But during the first part of this century, the two united.

We have had another separation, due to overestimating the study of the function of organs, which has been a boon to the profession, for we know some organs may seem normal so far as function goes, yet they may have pathology.

Due to the multiplicity of specialties brought about by the laboratory and extended studies, we have a condition whereby one man is inadequate to keep up with all the specialties we have need to master.

Many are looking into the future trying to determine what is the outcome. As nearly as we can see, it is the development of a type of medical practitioner who is capable of making a diagnostic survey.

Today the surgeon does not hold the place of prominence he did twentyfive years ago. There is coming into the field a new type of practitioner. He is the man who must be capable of making a diagnostic survey and correlating all this multiplicity of investigations.

Some men who are becoming restless in the profession feel group practice is the only way to practice medicine. It is a splendid way to practice for those who like it and are capable of giving up their old ways; but it is not the only way. It is not yet in a position to give the proper service to all communities. There is still over 90 per cent—we are guessing at it—of the people who cannot be reached by this method, so there must be a connecting link between careful, keen, accurate scientific diagnostic surveys and the people, and that is the border line where we must work out our difficulties.

The science of medicine is again waiting for the methods of practice to catch up with it. The type of ordinary, everyday practitioner must be again standardized. Out of the confusion there is already developing this new type of practitioner, whose ideals are as high as the ideals of the old. He is more adapted to the new science, and he is capable of giving that service which the public demands.

Dr. W. R. Boyer, Pawnee City.—We have had the privilege of hearing this morning a paper read by Dr. Sutherland on the Passing of the Family Practitioner. We have heard a paper read by Dean Cutter and an admirable discussion by Dr. Rowe. These gentlemen have looked upon this from different standpoints from that which I want to take up now, because I am going to take it up from the standpoint of the general practitioner.

For thirty years I have been rubbing elbows with other general practitioners, and I am going to tell you the day of the general practitioner will not pass so long as they get fair treatment. I will tell you why I think they are passing. In the county wherein I live we have seven physicians, and it is one of the oldest counties in the State. At the time Dr. Wilson lived there, there were seventeen. These men have for various reasons drifted away, and none have come to take their place. During the war there were several towns from three to five hundred with no practitioner whatever.

In the first place, Dr. Sutherland said we had a certain number of physicians who were short on education and shorter on honesty—who were slick as a monkey and slippery as an eel. They did not know their limitations. The thing our present day education is doing, if anything, is this: It is showing what we can and cannot do. If we are honest, we will tell our patients what we can do and what we cannot. In the past, there were men so ignorant they thought they could do anything. They were all-round specialists. Fortunately there are but few of these left and many of our best, most dependable and respected physicians are two, three or at most four year graduates.

On the other hand, are we not, under the present system of educating men, carrying this too long in length of time in order to educate them sufficiently that they may be general practitioners, and not specialists? Take any young man—and we have at least seven in the University Medical College at the present time—what man will spend $15,000 of money and seven years living in a city, and then come back to a small town of three hundred to live? They won't do it. You can't even get a trained nurse to come to a town of 1500 inhabitants. I offered one a hundred a month and no night work. She said she would not live in a town of that size. They can't be content to live in a small town.

The time is coming, if our present educational plan is carried out, when the smaller towns will be without physicians, because the younger men will not go there. It does not mean the passing of the family physician. It means the passing of the village physician.

My idea would be that a general medical education should be carried four years, then graduate him as a physician and permit him to go back to his old home or elsewhere as such, but should he desire to practice a specialty, require him to continue his study in that special branch for a couple of years more and then give him an advanced degree.

The chief thing that is ruining the number of family physicians is nothing more than the financial part of it. A surgeon gets larger fees. I am going to say one thing about this law in the State regarding the division of fees. The plan is not correct. Other states do not have it. The practitioner makes the diagnosis (the internist is the man who makes the diagnosis in nine tenths of the surgical cases) and takes the case to the surgeon. The surgeon gets a large fee, he gets nothing. The surgeon gets $250 for doing an operation that takes fifteen minutes, while the general practitioner who made the diagnosis and advised the operation gets his expenses to the city and the privilege of witnessing the operation.

Another thing is that our specialists oftentimes do not treat the family physician fairly. I had a case recently in which I made a diagnosis of Graves' disease. This case had passed through the hands of the same man to whom I sent him for estimation of his basal metabolism. I got a nice letter from this doctor, who said it was +50; that he undoubtedly had Graves' disease; that the X-ray was very effective and they had given him one treatment and asked him to come back. The man has never been in my office since. I got one office consultation out of it.

Dr. J. Lue Sutherland, Grand Island.—As this is something in my line, I cannot refrain from emphasizing a few things I was prevented from finishing this morning.

There is no man in the State of Nebraska, or anywhere else, who has greater respect for the competent man—no matter whether he belongs to a group of physicians or not—if he is competent in what he is trying to do and ethical in his methods, he has my respect. I do not want to be misunderstood in that particular. But as the last speaker has said, a great many of these groups, and different members of these groups, are unfair to the general practitioners who send them patients. We are not treated with the proper respect nor given the proper consideration.

A few years ago I had the misfortune to have a very serious case of sickness in my own family, and I studied the case night and day. Under the advice of some of my confreres, I sent for a surgeon. Prior to his coming, I had written him a letter giving the full history of the case. The day prior to his coming, I saved specimens for his examination. He came and spent two and one-half minutes at the bedside. He did not look at the specimens I had saved. One was a bowel movement in response to an enema which took two hours to give and which I thought characteristic of the condition. I was pushed aside; my opinion ignored; an operation performed—the diagnosis of the specialist went into the air. Even after the abdomen was opened, an erroneous diagnosis was made and a fatal prognosis given. The patient lived ten years afterward in as good and comfortable a condition as in the ten years previous. I had the pleasure of having a conversation and some correspondence with that specialist afterwards, and among other things advised him that all the brains of the medical profession are not always found in the city, but that sometimes country practitioners know a little themselves.

That is the plea I wish to make now: If the specialist is to get his reward—and I am willing he should—he must treat us who send him patients with some degree of consideration, and not swallow up not only that patient, but his family and friends afterwards.

I have been specializing in a weak way since 1900, but it is a pleasure to recommend cases out of my line to my confreres who I think are better qualified to handle them than I am.

All I ask is fair treatment. We do not get sufficient compensation for studying the case and making the diagnosis and helping the specialist to arrive at the diagnosis. We may not be right at all times. Maybe it is a good thing for the patient we believe we do not possess the skill to operate; but if group practice has come to stay, its methods must be fair. They must not "hog everything".

Dr. H. H. Waite, Lincoln:—I enjoyed the paper very much. I desire to call attention to an important topic not covered in the paper. Dr. Cutter said the chief function of the physician was the alleviation of pain and the cure of disease. That has been true in the past. Probably it is true today. But in the future, and I hope in the near future, the chief function of the physician will be the prevention of disease. Dr. Cutter illustrated that in the case which he cited where a patient went to Physician A and got no results; to Physician B, etc. The chief function in Phyisican A was to have made a correct diagnosis and that would have been a means of preventing disease.

That is only one of the functions of preventive medicine. I want to make a plea for greater attention to the preventive side of medicine.

Dr. Chas. H. Breuer, Lincoln:—I agree heartily with everything Dr. Cutter has said, but I want to emphasize several points. He very ably has shown us the difference between laboratory and clinical diagnosis. The laboratory will show only any changes that have occurred when damage was done to certain tissues. When there are functional disturbances, the real time to do any good to the patient to prevent disease and prevent crippling and disfiguring,—the laboratory will show nothing. We must go by clinical signs and symptoms.

Dr. Cutter and another speaker talked about young physicians, and towns without physicians. That is because the young men are trained too long and do not want to go to the country. Unless there is something done, the country will be without practitioners. I have two boys who are with me. They do not want to go in the country. The cities are overcrowded by physicians. The country is bare.

Another point: In old times—forty years ago—when the young men were studying medicine they had a preceptor. He went with them on their rounds. He sat with them at the bedside. It inculcated into them the desire to explain these symptoms so that they could interpret them correctly. What is now being done to train them individually and give them the desire to follow these clinical signs and interpret them?

Dr. V. V. Smrha, Milligan:—I think the day of the general practitioner has not gone by, provided he knows where he stands. Where he is today is not the place he should be occupying. He is simply a chore boy of the profession to the city specialist. I think he should stop being a chore boy and be his own master.

I believe Dr. Vaughan has the thing sized up properly when he thinks we should have medical centers. To these centers the general practitioner could take his patients—for instance, to a hospital at a central point—and take care of those patients himself. There is no reason why a country doctor cannot take care of his patients, providing he has the place to put them and the proper care while they are there. He often knows as much, and sometimes more, about his patients, as the city specialist.

I remember a patient I took to a specialist with a fibrous union in a fracture. This specialist fixed it all right as far as the trouble went, but instead of taking care of the patient, he sent him back to me with three fistulae. What is a country doctor to do with three fistulae? I had to take care of that fellow, and am thankful I took care of him well enough to get him well.

If we had our patients where we could take care of them ourselves in the first instance, we would get as good results as the city specialist and have the patient nearer his home and friends, and also get the fee connected with that case; whereas in the usual case we are fortunate if we get our expenss paid. The country doctor is getting the short end of the deal, where he deserves the long end.

You folks who are specialists have united yourselves into a band where you can hold yourselves together and do what you please. I am glad you are enough to do that. It shows what we can do, if we follow your example.

This matter of splitting fees that is such a great sin on the part of the country doctor, the city doctors think is the Bible to the city specialist. In the country doctor, it is a mortal sin. I think that position is entirely wrong. I know I am going to be censured, but it is a fact I think that will stand the test. I believe we are in the same position as a lawyer who employs another lawyer versed in a special line of the law to assist him in the case, and then splits the fee. I think the man who gets the case is entitled to the case as much as the city specialist who tells the interne to turn his patient out after he is well.

Dr. W. F. Milroy, Omaha:—I have been very much interested in this discussion. I was very much interested in Dr. Cutter's paper.

I came to Omaha in the fall of 1884, and my first connection with the Omaha Medical College was demonstrator of Anatomy. I have had connection with the institution ever since. I have thought about some of these things in reference to our graduates. At that time, the college required only two years of medical attendance at the college, although quite a good many of our students occupied three years there. Those men were graduated, and the great majority of them went to the country. They had spent, comparatively speaking, a very short time in acquiring the education they had. They had no college degree except their medical degree which we conferred. Most of them had had more or less of high school education. Occasionally there was one graduated by some college or university. Those men occupied only six months each year in attendance at the college. The balance of the year they were able to devote to making some money to support themselves while acquiring this education. Occasionally there was one who had a hospital interneship, but nearly all did not. They went immediately into practice.

I have always maintained our college, and others doing similar work at that time, were doing splendid work and filling a position that was in demand and necessary, for the reason our country here in the west was sparsely settled. Those men could afford to go out and settle in the places one of the speakers said recent graduates would no longer consider, and the country was supplied with medical service, and very good, practical service.

As to what will happen under present conditions in this particular, I am uncertain and unprepared to say. I have never heard until today the statements made we have listened to with reference to recent graduates refusing to go to these smaller towns. It has seemed to me they probably would refuse to go. They have spent all these years and large sums of money in acquiring their education, and would feel themselves entitled to be located under the most favorable conditions. What is to become of localities more remote?

It seems to me Dr. Cutter will agree with me we must watch carefully or our students will acquire the habit of placing too great emphasis upon the laboratories, and they will study laboratory results rather than the patient. I believe the part of Dr. Cutter's discussion which he characterizes as the art of medicine is more essential than the science. However, these scientific processes that are made use of nowadays are of wonderful value, and I think that the general practitioner must recognize that, and must, as has been said, recognize his limitations and feel it a privilege to send his patients, when there is need of it, to those who are expert in this laboratory work. In that way I think the doctors in the smaller places will be successful in giving their patients the best that can be had.

I believe there will come, as you can see it has been coming, the development of centers such as the last speaker referred to, where there are hospitals in the smaller towns within reach of everybody in the State. In the older parts of the country, the cities are closer together and more easily reached.

Dr. Miles J. Breuer, Lincoln.—The younger generation has not been heard from yet, and I should like to tell you how we feel about it. I think Dr. Cutter's main idea was to arouse our thoughts regarding the tendency and trend of present day medical education. We are taken aback by the long years and the thousands of dollars required to equip a man to practice medicine. As medical knowledge increases, we wonder how much farther this condition is going to go.

There are no few years of instruction that can take the place of long years of observation of the patient. There is no way to turn out a young man from college the equal of the gray haired practitioner who has seen thousands of cases. We thought for a while that perhaps the wonderful advance of laboratory diagnosis would permit us to handle our patient on an equal footing with older men. It will never do so. It is valuable. So is your automobile. But it is not going to make your diagnosis, nor take the place of clinical experience. The laboratory apparatus is a convenient piece of machinery, and you should have it and depend on it. In some cases, you cannot get along without it.

But the practice of medicine is a matter of relationship between human beings, and the man who knows human nature best is going to make the best doctor.

The medical course which succeeds in teaching the young man that he does not know very much, and gives him the attitude of wanting constantly to learn, and of being willing to ask for assistance when he gets up against it, whether he lives in the country or city, is going to be the successful medical course. How long it should last, and to what detail it should go, I can answer by saying it should turn him out in such condition and frame of mind it will be safe to allow him to take care of sick people. That does not mean he must know everything. It means a proper attitude of humility, and proper training in a few ailments and illnesses, and a desire to study, and a willingness to ask for assistance when he needs it.

Dr. W. H. Wilson, Lincoln.—I want to congratulate Dr. Cutter on his paper, for it is certainly a classic.

For nearly forty years I have been watching the evolution of the practice of medicine, and medical legislation for several years, and the elimination of cheap medical schools, etc. I can say I am now, and have been, largely in sympathy with much of the movement. I am not going to attempt to solve or to offer a solution of the problem that confronts not only the medical profession at this time, but the laity as well.

This matter of attempting to supply the rural districts and small towns of the country with these high class men such as the paper indicated, I believe is going to be a failure. I call your attention to this fact: That something near twenty years ago the so-called osteopaths—drugless healers—came before the legislature, and after a few efforts, they were legalized to practice their cult, or whatever you call it, in this state. It soon became legalized over the country at large. They declared drugs were not necessary in the healing art; but if you will just think of it a minute, you will realize as years have gone by, finding need for drugs they have been gradually, using more or less drugs; until two years ago they came before the legislature and got the law amended so that they can use drugs about as wished same as the general practitioner.

A few years ago, as an offshoot from the osteopaths, the so-called chiropractor became busy in the land, and in 1913 succeeded in getting the legislature to legalize him to practice the healing art—a drugless art. I predict, my friends, it is only going to be a few years until these so-called chiropractors will find need of drugs just as the osteopaths have, go to the legislature and get the privilege.

What I am trying to get before you is this: These off color schools are preparing people to practice the healing art in a much cheaper way than the regular profession can do at this time. Are we going to be able to get enough young men and women to take this long, arduous, expensive course the doctor has pointed out, to meet the required demands of humanity in the practice of the healing art, when they can go into one of the cheaper schools and in a few years' time, and with very little expense, acquire a legal status and go out and compete with these persons who have gone to so much time and expense in preparing to practice medicine?

That is the thing I think is confronting us, and we should seriously consider it. Do not think for a minute I would ask to have the qualifications lowered; but there should be some way devised to meet this condition I have pointed out.

Dr. I. S. Cutter, Omaha.—I appreciate the discussion very much.

I am sure not one of the speakers would advocate a reduction in the quality of medical graduates. If it is possible to reduce the time, I am for it. I do not feel that we would be on safe ground to assume that we could reduce the quality of the men graduating, because the standard set is a reasonable standard of proficiency, and the people are entitled to the best we can give them.

The answer to the question that has been brought in as to the supply of men for the country, I believe is this: We have had no difficulty in getting our graduates to go to the country—80 percent of them go. But they go under very different conditions from those under which many men now practice. Where a man has been making $3,000 a year, the graduates of recent years are increasing this to 6 or 8,000 or even more. Why? Because they are delivering more to the people. They are making more by doing better work and are satisfied to remain for several years under these conditions.

Many physicians are building themselves hospitals or cooperate with the community to build hospitals. The state of Iowa has a law which permits townships to vote bonds for a so-called "community hospital." That law is absolutely necessary in Nebraska. Dawes county requested the legislature to pass such a law. Undoubtedly it will go through next session. Hospitals of from ten to twenty-five beds in the small towns offer the solution for the best kind of practice in the rural districts. Don't say, "It will not pay." It will. Hospitals are paying more than expenses in towns of from three to five thousand people. I would not advocate the building of too large or too expensive a hospital for the population of the country tributary to the institution. That mistake is too frequently made. Better a ten bed hospital filled than a twenty bed hospital half full.

The number of medical graduates is now on the upward trend. It will only be a few years before the number of graduates will exceed the high water mark of a few years ago.

I feel that good business methods will solve the relation between the surgeon and the country doctor when it comes to the matter of the disproportion of fees that undoubtedly exists. Possibly some committee could work out a businesslike arrangement. We have too big a common enemy—medical charlatanism—to permit the existence of distrust among conscientious practitioners of medicine.

A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Nebraska. Formerly Lt. Col., M. C., U. S. Army.

CHAPTER IV.

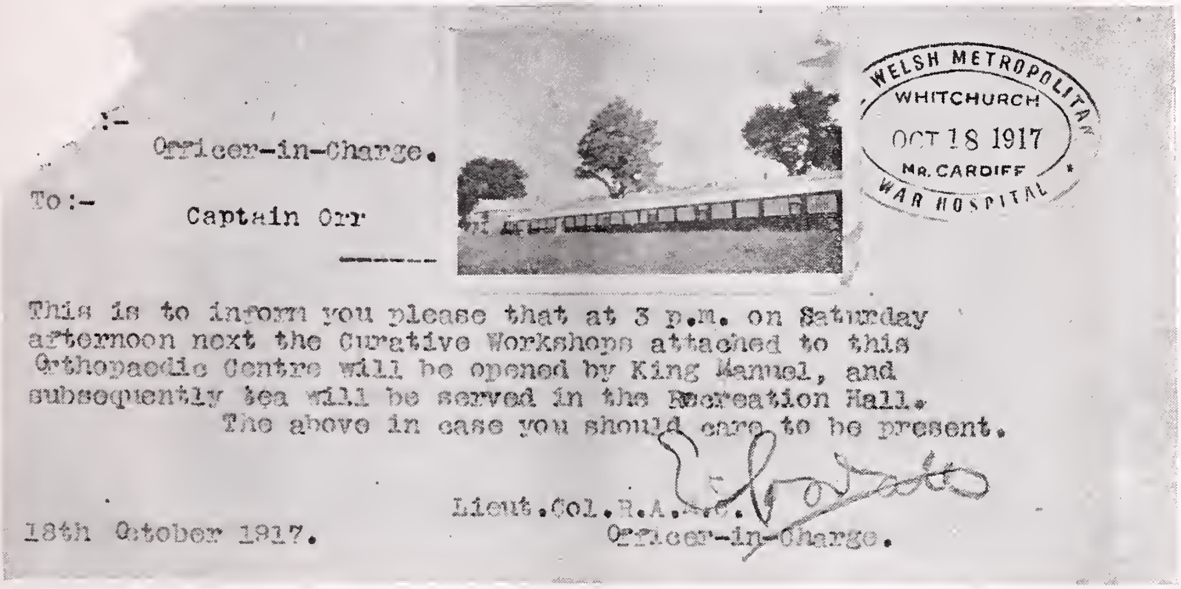
In July, 1917, the American officers who came to Great Britain as members of the first Goldthwait unit were all located and working in the British Military Orthopaedic centers. About this time Major Goldthwait received orders to return to the United States. He spent two months in the Surgeon General's office in Washington. This time was devoted, with Col. E. G. Brackett, Director of Orthopedic Surgery in the United States, to developing plans for the American orthopedic acitivities in France and to recruiting the second Goldthwait unit for service overseas. This unit, consisting of forty-five officers and twelve nurses, left the United States in October. It was my privilege to visit members of this second unit, in the Curzon Hotel in London, early in November.

During the time between June and November there had been many changes in our ideas as to what our part was to be in the war and as to the future of the Orthopedic Service. Original plans had been that we should remain on duty with the British only a few months; and that American orthopedic participation in the war would require our services in France or perhaps even our return to the United States by November. However, it had become clear that there was no particular need for most of us in France and that our greatest field of usefulness for the present, lay with the British. Consequently, most of the members of both the first and second Goldthwait units remained or were now assigned for duty, with the British.

On November 7th, Major Goldthwait was given the rank of Lieutenant Colonel and appointed Director of the Orthopedic Service for the American Expeditionary Forces in France. Major Osgood was appointed as his first assistant. More definite plans for the conduct of the Orthopedic Services in France were begun at this time. It was, however, some months before Col. Goldthwait's original ideas had much effect upon the organization and operation of the hospital services in France.

At any rate my visit to London enabled me to talk over with Col. Goldthwait, Major Osgood and a number of other old friends, the work so far, and to get at least some hazy ideas regarding the future.

By way of consoling myself for the disappointment of not getting to France, I secured permission to visit the orthopedic centers at Edinburgh and Glasgow. I had already spent a few days with Major Erving at Oxford. The orthopedic service there was smaller but very interesting. Patients were distributed through the dormitories and living quarters of several of the Oxford Colleges. Major Erving, himself, was quartered in New College, where I had the privilege of being entertained at dinner with the members of the faculty at the "high table".



WELSH METROPOLITAN
WHITCHURCH
OCT 18 1917
NR. CARDIFF
WAR HOSPITAL

:-
Officer-in-Charge.

To:- Captain Orr

This is to inform you please that at 3 p.m. on Saturday afternoon next the Curative Workshops attached to this Orthopaedic Centre will be opened by King Manuel, and subsequently tea will be served in the Recreation Hall.
The above in case you should care to be present.

Lieut.Col.R.A.M.C.
18th October 1917. Officer-in-Charge.

Note from the Commanding Officer on the occasion of the formal opening of the work shops. The photograph (by Dr. Orr) inserted shows all of the shops and the gymnasium at the left.

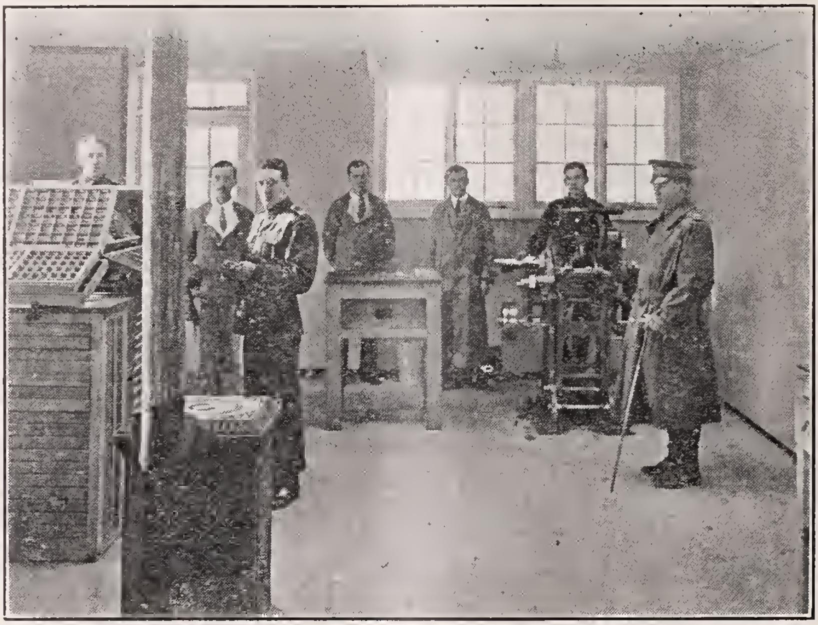
Later on, I visited at Oxford again, this time as the guest of Dr. and Mrs. Charles Singer. Dr. Singer was professor of the History of Medicine and an associate of Sir William Osler. I am happy to say in passing, that no one in Great Britain was more cordial to the Americans than Sir William and Lady Osler. Sir William made trips to nearly all of the places where Americans were stationed and performed many acts of kindness and generosity to contribute to their comfort and welfare.

At Edinburgh, I found Captain Baldwin and Captain Danforth doing very important and very useful work. Sir Harold Stiles received me at his home and took me out in his car to the Surgical Clinic at Bangour Hospital the morning that I arrived. He was particularly enthusiastic about the work of both the above Americans, each of whom had charge of approximately 500 beds in the Orthopedic Service. A number of other Americans including some of those who had just arrived in Great Britain were associated with Captains Danforth and Baldwin as juniors. This same plan brought to Cardiff the other Americans who have already been mentioned, for training in the Orthopedic Service.

The next afternoon I had the pleasure of having dinner in Glasgow with Captains Graves and Eikenbary and the other Americans who were on duty at Bellahouston Hospital. The Orthopedic Service here was neither so well organized nor so well developed as at Edinburgh, but the two American officers referred to, both of whom were sound orthopedic surgeons, were exercising a definite influence upon the orthopedic work in Glasgow.

I was sorry for many reasons not to get up to Aberdeen where Capt. Francesco, a very good orthopedic surgeon from Kansas City, and Lieut. Langworthy of Chicago were at work. Both of these officers also did good work with divisions in France later on.

At Edinbugh, Sir Harold Stiles was doing some of the best technical surgery to be seen in Great Britain. This was true particularly of his work on the injuries of the peripheral nerves. It is gratifying to find so satisfactory an account of this work in Sir Robert Jones' recent book, "The Orthopedic Surgery of Injuries". As pointed out at that time and since, the war hospitals have brought us to a much more definite realization of the importance of reuniting divided principal nerves. Still more important has it been shown to be, to liberate from scar tissues, the injured or divided nerves that have become involved in the wound at the time of accidental injury.


Curative Print Shop at the Welsh Metropolitan War Hospital, Fall of 1917. (Capt. Orr in charge).

On the return trip from Liverpool to Edinburgh, I spent a few hours in London just after a terrific air raid. As we came into the station at 7:00 o'clock in the morning, we found the concrete corridors, stairways and platforms crowded with people who had spent the night there. The crowd was apparently not very much alarmed but very uncomfortable and thoroughly resentful. In the streets it was found that a good deal of material damage had been done.

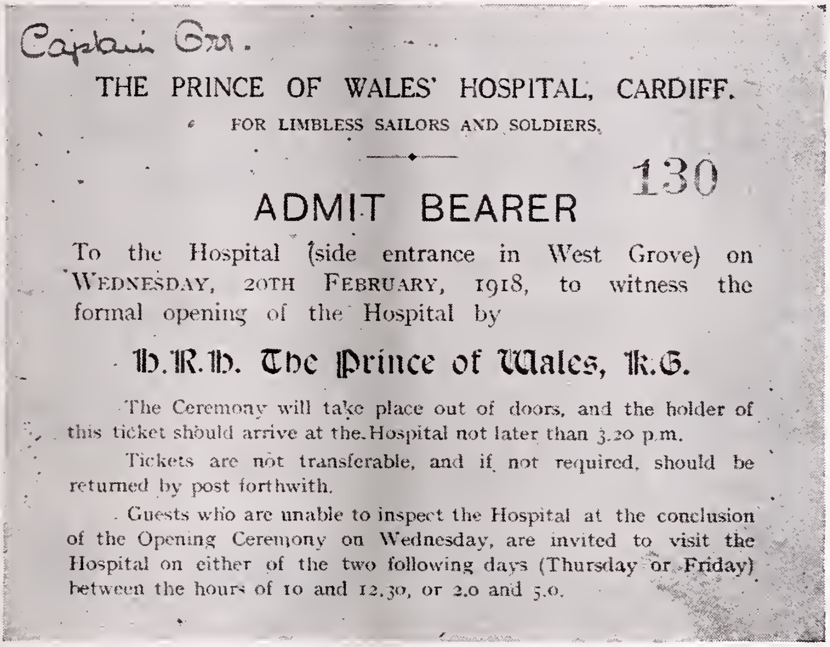
During the fall of 1918, at Cardiff we developed the Orthopedic Service considerably. The auxilliary hospitals were well organized and were taking care of several hundred of our patients during the time when they required less active treatment.

The curative work shops were formally opened and became a useful adjunct in the prosecution of our work. In the print shop, in which I was especially interested, a considerable number of men were taught to develop usefulness in crippled hands, wrists and fingers. Soldiers with lame knees were encouraged to run the foot power printing press. Those who had lost right hands were taught typesetting and distributing to increase skillful use of the more or less clumsy left hands and fingers.

We had here, however, a difficulty which was always a serious matter in the vocational retraining of soldiers; that is, many of the men were too old to adapt themselves readily to education or reeducation of any kind. In particular many of them had difficulty in deciding upon work in which they would be interested or in applying themselves to the serious mastering of a new trade. At Cardiff the printing shop really succeeded in developing a few such men. Our best shop in this regard was perhaps the boot shop. Here a considerable number under the guidance of an accomplished and skillful instructor became proficient in boot and shoe repairing. Quite a number of the men also did good work in the brush shop, and weaving shop, the brace shop and the carpenter shop. In addition, our Sergeant Jones contributed to the progress of many of those with amputations and stump deformities in the gymnasium.

The care of our amputated at the Welsh Metropolitan War Hospital almost deserves a separate chapter. Certainly my experience in this work had a considerable influence upon my attitude towards the large number of our own amputations that I saw with Capt. Phillip D. Wilson in our service at Savenay in France.

The British had got so far behind in the care of their amputated men that they were compelled to send them home from the hospitals as soon as the primary wounds had healed. The intention was to bring the men back to the limb fitting centers to be cared for as rapidly as possible and to have artificial limbs put on. Neither the hospitals nor the artificial limb factories, however, were able to keep pace with this demand. In 1918 there were said to be about 10,000 men waiting at home to be sent for for limb fitting. Our experience with these men showed how important it is to make the treatment continuous from the time of the original operation. Of 500 patients who returned to Whitchurch and went through our service, more than 300 required either reconstruction or surgical treatment, or both, before their limbs could be put on. Many of the men had discharging sinuses from osteomyelitis or from foreign bodies in the stump, that had not been removed. Others had contracture deformity, flexion of the thigh, flexion of knee, adduction of the arm, etc., so severe that an artificial extremity could not be put on in a position to be worn. All of these things had to be corrected. In two instances I had the privilege of correcting by the Soutter operation, a thigh stump flexion deformity which had been pronounced by the limb factories too severe for an artificial leg to be worn. Both of these men were successfully wearing artificial limbs when I last saw them.



Captain Orr.

THE PRINCE OF WALES' HOSPITAL, CARDIFF.

FOR LIMBLESS SAILORS AND SOLDIERS.

◆

130

ADMIT BEARER

To the Hospital (side entrance in West Grove) on WEDNESDAY, 20TH FEBRUARY, 1918, to witness the formal opening of the Hospital by

H.R.H. The Prince of Wales, K.G.

The Ceremony will take place out of doors, and the holder of this ticket should arrive at the Hospital not later than 3.20 p.m.

Tickets are not transferable, and if not required, should be returned by post forthwith.

Guests who are unable to inspect the Hospital at the conclusion of the Opening Ceremony on Wednesday, are invited to visit the Hospital on either of the two following days (Thursday or Friday) between the hours of 10 and 12.30, or 2.0 and 5.0.

For the success of this service in Wales, the greatest possible credit is due to Colonel Sir John Lynn Thomas, who conceived, secured the funds for, and successfully developed the Prince of Wales Hospital for limbless men in Cardiff. This hospital is still performing an excellent function for these men and will doubtless continue to do so for many years. In December, 1920, this hospital also opened a ward for crippled children, a feature which I had the privilege of discussing with Sir John Lynn Thomas on several occasions during my stay in Cardiff.

In December, 1917, a conference of all surgeons on duty in the British Military Orthopedic Centers, was called by Sir Robert Jones, to meet in Liverpool. For that conference, I prepared a paper on "The Importance of Tendon Surgery in the After Care of Injured Soldiers with Irreparable Peripheral Nerve Injuries."

(Continued on Page 258).

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PRICES OF REPRINTS REDUCED.

The Journal is authorized by the printer to say that the prices of reprints have been materially reduced.

GOITRE.

During the last few years the attention of medical men has been called more and more to disturbances of the thyroid gland. Much research work has been done in this respect; and due to this, the gland in question and the abnormal conditions of it are much better understood than they were a short time ago. On account of this interest, it is only natural that some of the investigation took the course of trying to discover some means of prevention of goitre. This work is well summed up in a recent editorial in the Journal of the American Medical Association. However, if the internal administration of sodium iodide does prove to be an absolute preventive of goitre, there will still be a big subject to be handled. For, even if it does become possible to prevent these enlargements of the thyroid, we will still have goitres to be taken care of. Many people would not take advantage of the treatment.

As quite a large per cent of these goitres change to conditions of either hyperthyroidism or thyro-toxic adenoma; and as it is often extremely difficult to distinguish these two in their early stages, from a beginning endocarditis or a beginning pulmonary tuberculosis; if there were at hand some means easily employed by every doctor to enable him to make an early diagnosis, a great step forward in handling these cases would be made. There has been, of course, a vast amount of work done along this line, but as yet nothing of real service has been produced. We are familiar with the basal metabolism, the hyperglycaemia and the Goetsch tests. These tests are all very technical and can only be used by experts, and in addition, they are not conclusive when done. Especially is this so of the Goetsch test, which many thought to be the best of the three, since the work done at the Peter Bent Brigham Hospital in Boston has been reported. These workers report finding many people with a hypersensitiveness to epinephrin, thus throwing doubt on the test.

These three tests then give us no real practical advance in handling cases of hyperthyroidism. If work which is being done can produce a preventive and also add a simple, practical means for diagnosis, then the doctor will be in a position to effectively handle this condition. Let us hope that these two things will soon be produced.

— R. B. A.

PROHIBITION FOREVER.

Members of the association should take pains to make it plain to the people of their respective communities that the Allied Medical Association of America is not the American Medical Association, but a disgruntled heterogeniety of nondescripts, and that the propaganda against prohibition fostered by the former organization is not the propaganda of the American Medical Association nor of the medical profession.

Whatever we, as individuals, may think of the wisdom of prohibition, one thing is certain: Prohibition is a part of the organic law of the land and will so remain. Whatever need there may be for malt and alcoholic liquors as medicine—and that need can not be great or imperative—can be met by existing laws. Let no one deceive himself; prohibition is here to stay, and the next generation will accept it is a fact.

Moonshining and bootlegging are flourishing occupations at present in spite of the law, but the element of time will end most of this. Horse stealing flourished in spite of the law before the automobile age and has been succeeded by auto theft. Shall we advocate repeal of the law against auto stealing?

THE PRACTITIONER'S COURSE GIVEN IN OMAHA.

The second annual Post-Graduate Course for practitioners offered by the University of Nebraska College of Medicine was given during the last two weeks in June. The course was most successful and was received with great appreciation on the part of those attending. There were regularly scheduled lectures and demonstrations covering physical diagnosis of heart and lung diseases, diseases of stomach and intestines, fractures and neurological examinations. Using the wealth of material afforded by the night dispensary clinics, Dr. C. R. Kennedy gave a series of demonstrations covering modern treatment of gonorrhea and syphilis.

The course was intensely practical. Two hours were devoted each day in the University Hospital to the bed-side study of medical and surgical cases. Bed-side clinics in surgery were conducted by Dr. J. E. Summers, Dr. B. B. Davis, Dr. J. R. Nillson and in medicine by Dr. James S. Goetz, Dr. Frank Conlin, Dr. L. T. Hall and Dr. J. F. Allen. Special clinics in tuberculosis in children were given by Dr. H. B. Hamilton, in adults by Dr. J. F. Allen.

A feature of the course was a daily round table in which timely topics of special interest to practitioners were discussed. The topics followed suggestions of members of the class.

The time devoted to the course proved most profitable to those in attendance. Extending the course to two weeks more than demonstrated its value. The course which will be offered in the summer of 1922 will be of two weeks duration, but will cover somewhat different topics. The following physicians were in attendance:

Dr. O. H. Margaret, Papillion; Dr. A. R. Downing, Merna; Dr. E. Pfeiffer, Nelson; Dr. R. H. Burrell, Creighton; Dr. C. E. Protzman, Garland; Dr. R. H. Sawyer, Lincoln; Dr. R. C. Richards, Newcastle; Dr. R. F. Mullin, Bellwood; Dr. C. C. Barr, Tilden; Dr. Charles Frandsen, Scotia; Dr. C. W. Way, Wahoo; Dr. R. B. Campbell, Franklin; Dr. A. L. Hawkins, Omaha; Dr. J. E. Davis, Albion; Dr. H. A. Briggs, Paxton.

TEN DAYS IN THE LAND OF THE MONTEZUMAS.

An opportunity the like of which comes to few, came to the editor in June, an opportunity to be the guest of the Mexican government for ten days. The temptation to tell his friends and readers in the profession something about the trip is irresistable.

It was a party of 14 Meridian Highway officials behind a propaganda to extend the Meridian Highway from the border to Mexico City. The Mexicans sent a government owned Pullman, with military and engineer escort, to Laredo for us, and we were off for a journey in strange world. Several hundred miles south of the border we spent the first day at Monterey. Three things at once impressed us,—the patriotism of the people as evidenced by their heroes placed in imperishable statuary, the squalor of the lower class of peons, and the fact that American advertisers are reaching out for Mexican trade in Spanish verbiage, for here in the street car the eye at once fell upon Lydia Pinkham's familiar face and "lingo".

The trip took us over the high plains country. Saltillo, some 4000 feet high, and a beautiful city, surrounded by mountains, before the revolution had an annual crop of tourists from the United States who went thither to enjoy the mild and equable climate. San Louis Potosi, 6000 feet high, a still more beautiful city of 80,000 people, and one of the most important places in the interior of Mexico, also had attractions for tourists before the revolution. Queretaro's historical association with the ill-fated Emperor Maximilian is well known. Here was accorded to us the very unusual privilege, by special permission, of viewing the inside of an old Spanish mansion, the present home of a Mexican millionaire. There was a patio with fountain and a riot of foliage, and the mansion proper with such beauty of arrangement and such finery as surpasses mere man's descriptive powers. The last of the dozen rooms we were privileged to view was the dining room, and beside the table silver stood a bottle of Scott's Emulsion!

In Mexico City we met an American, Dr. A. W. Parsons, who was the first American to graduate from the Mexico medical college, 23 years ago. During the revolution when Huerta's men were badly in need of surgical care Dr. Parsons took charge of the surgical work and in consequence he later had to leave the country, and he had but recently returned after six years' absence.

The general hospital at Mexico City is the equal of any in the world. Eleven years ago when the late Dr. John B. Murphy visited the capital he was told the psychopathic department was the foremost in the world. Dr. Murphy smiled incredulously, only to admit the fact on inspection. The Mexican doctor's shingle reads somewhat like this:

O O O O O O O O O O O O O O O O
O O
O DR. RAFAEL SILVA O
O Facultad De Paris O
O O
O O O O O O O O O O O O O O O O

Our mission took us to Monterey, Saltillo, San Louis Potosi, Queretaro, Mexico City, Cuernavaca. Three days were spent in the capital, a modern city with a population of 800,000.

The impression formed on a ten days' trip is that Mexico is a country of vast possibilities, and that her people have been greatly misunderstood by people in the United States. The Mexicans are a high minded people, endeavoring to improve their conditions under many discouragements.

With a fund of first hand knowledge one has every confidence that our relations with Mexico will be satisfactorily ironed out in the near future. The general feeling among those with whom we came in contact is that the present administration is secure.

Mexico is a strange mixture of ancient and modern. The highest type of civilization and the most primitive barbarism are often found in close proximity.

THE BOSTON MEETING.

It was the unanimous opinion of those in attendance that it was the most pleasant, profitable and altogether most satisfactory meeting that has ever been held. From the moment that we landed in Boston it was noticeable that everything had been arranged for the visitor's comfort and convenience. The hospitality was so general that it seemed to be a characteristic of the Bostonese.

To Westerners especially this locality is a treasury of historical places, and its wealth of magnificent institutions, their superb settings, in the midst of an environment of individuality, charmed, delighted and quite fully inspired every one. Altogether the education and recreational value of the trip to Boston has been an exceptional one.

There are literally hundreds of places in and about Boston of great interest to all red blooded Americans. Great pains were taken to make these places available to all. The wives and daughters especially had pleasure and profit in this, though the doctors, too, were able to crowd in several of these trips.

In the outlying towns their rolls of honor were set up in the public squares. The old houses gave silent tribute to the patriotism of their owners by possessing flag poles as a part of the architecture. The present generation would do well to re-read their country's history lest any forget the price our forefathers paid for the blessings which we now enjoy with so little cost.

The new arrangements for the sections to meet half days only, was a relief and comfort to all, and gave opportunity to attend other than one's own section, because part convened forenoons and others afternoons. There is a rather noticeable improvement in the quality of the scientific program, due perhaps, to a more highly developed specialism. The papers read are practically all presented on invitations of the section officers who seek to have their departments reflect the most advanced scientific methods of our American profession and foremost clinics. These programs are so brim full of papers (whose authors are present) and the discussions so fully prearranged, that there is little time for the old time, free for all, desultory, irrelevant discussion so common a generation ago.

The clinics, which were given by Boston men in their various institutions, were many and were well attended. It gave opportunity, also, for these institutions to be visited by those who perhaps saw them for the first time, which must have had an inspirational effect, judging from the writer's own emotions after repeated visits in previous years.

Through unfortunate circumstances, the writer was the only seated representative from Nebraska in the House of Delegates. It was a new experience, and he was especially impressed with the representative character of those composing this deliberative body of our great association. For sincere integrity of purpose, manifest fairness, democratic principles and adherence to fine professional ideals and traditions, governed by strict parliamentary usage, (there was no evidence of cheap political methods or maneuvers.) the writer wishes to express his appreciation of the unselfish labors and sacrifices of the association's representatives who give their time so selfsacrificingly to our great profession's affairs through its organized body, to the end that society and we individually and collectively will profit thereby.

Dr. George E. de Schweinitz of Philadelphia was elected president and Dr. Frank B. Wynn of Indianapolis vice-president.

The 1922 meeting will be in St. Louis.

— J. P. L.

NEW DUTIES OF THE MEDICO-LEGAL DEFENSE COMMITTEE.

Elsewhere in this issue of the Journal members of the Association will find a correct copy of Sections 2723 and 2725 of the General Laws and of Sections 8584 and 8585 of the Criminal Code of the State of Nebraska, pertaining to the following subjects:

Physicians practicing without a license;
Doctors dividing fees;
Foeticide, and homicide in committing same; and
Attempting to procure abortions.

We urge upon our readers a study of these sections at this time, because at the last meeting of the Nebraska State Medical Association the committee on medico-legal defense was charged to add the duty of a better enforcement of these laws to their labors of defending members against malpractice suits.

No higher compliment could be paid any committee, as an assurance of Association's satisfaction with their work, than the addition of these new important duties to their efforts in serving the profession and, at the same time the people of our great State.

It is not generally known that the Nebraska State Medical Association adopted medico-legal defense for its membership as one of the first four in the United States. We quote from a synopsis of the first six years' work in this state as given to the Arizona State Medical Association in 1914:

"Plan very effective, managing their own defense, creates an esprit du corps, which has never existed before; broadens the enthusiasm and brotherly regard. Almost impossible for plaintiff to get a physician to testify."

What is still more gratifying is the statement of the defense committee, that it has never called on any member to appear in court, to testify for his brother in distress, who not only has not refused to attend, but who has gladly responded to the call for help.

And yet, we feel, after being shown a statement from a physician, who was then sued for malpractice, which read: "I did not call further on the committee of defense, because it seemed, in this case, that we were going to be able to handle things to better advantage locally. I have really the best feeling for the committee of defense and know that their services are of value." The doctor was mistaken when he said that it seemed that we were able to handle things better locally in spite of the fact that he had employed a very capable attorney and locally very prominent. He overlooked the fact that the medico-legal defense committee always prefers local counsel, with or without the assistance of the committee's attorney; and further he did not take into consideration, because it did not occur to him, that the committee makes it a rule to see to it, that its own attorney is not only fully posted as to the medical or surgical details in each case, but so must the local attorney be posted also; and whatever expert appears in the case, must be an expert as to the points involved in this particular case, both from the standpoint of the plaintiff and the defendant.

This really is the key to the committee's success, whatever else they may do and contribute.

The success following this method of work has been almost phenomenal. One case was sui generis. The plaintiff a physician and the defendants two physicians and a hospital,—all members of the same county society. The chairman of the defense committee and its attorney called on the plaintiff doctor for his version of the case; though at first reluctant to show his cards, he finally repented and talked freely about the case and his side of it. He was then told that he would most certainly lose his case. He tried it.

In the case of one physician the court dismissed the jury and threw the case out of court for want of proper and sufficient testimony. The case against the second physician was tried by jury and decided in favor of the defendant. Then the defense committee withdrew, when the case against the hospital was called and the plaintiff won by jury decision.

Here the defense committee, as in duty bound, carefully guarded the interests of the plaintiff doctor and the defendant doctors, and yet, as predicted before hand, the defendant doctors left the court room victorious and gratified and grateful to the association and its defense committee. In the hospital case the committee had no jurisdiction.

We ask the profession to second in the most warm hearted way the work of the defense committee, quadrupled by the association at its late session; thus showing in the best and most profitable manner its appreciation of the work of their committee.

— A. S. vonM.

A BREACH OF CONFIDENCE.

During the spring months there was offered to the Journal a manuscript on an important topic, and for special reasons, was given early publication. The Journal has recently discovered that this article, verbatim ad literim, was originally published in July, 1908, and that there are reprints of the article extant.

It is grossly unfair to the association and to the Journal to do this sort of thing. The first impulse is to publish the author's name and address, but on reflection, the Journal refrains.

GENERAL LAWS AND PROVISIONS OF THE CRIMINAL CODE OF THE STATE OF NEBRASKA PERTAINING TO PHYSICIANS.

2723, Sec. 14. **Practicing Without License.**—Any person not possessing the qualifications for the practice of medicine, surgery, or obstetrics, required by the provisions of this chapter, or any person who has not complied with the provisions of this chapter who shall engage in the practice of medicine, surgery, or obstetrics, or any of the branches thereof, in this state, shall be deemed guilty of a misdemeanor, and on conviction thereof, shall be fined in any sum not less than fifty dollars, nor more than three hundred dollars, and costs of prosecution for each offense.

2725, Sec. 16. **Doctors Dividing Fees.**—It shall be unlawful for any physician or surgeon to divide fees with, or to promise to pay a part of his fee to, or pay a commission to any other physician or surgeon or person who calls him in consultation or sends patients to him for treatment or operation. Any physician or surgeon who pays or receives any money prohibited by this section shall be punished by a fine of not more than one hundred dollars and be liable in a civil action to the patient for the full amount received.

8584, Sec. 9. **Foeticide and Homicide in Committing Same.**—Any physician or other person who shall administer, or advise to be administered, to any pregnant woman with a vitalized embryo, or foetus, at any stage of uterogestation, any medicine, drug, or substance whatever, or who shall use or employ, or devise to be used or employed, any instrument or other means with intent thereby to destroy such vitalized embryo, or foetus, unless the same shall have been necessary to preserve the life of the mother, or shall have been advised by two physicians to be necessary for such purpose, shall, in case of the death of such vitalized embryo, or foetus, or mother, in consequence thereof, be imprisoned in the penitentiary not less than one nor more than ten years.

8585, Sec. 10. **Attempting to Procure Abortion.**—Any physician or other person who shall wilfully administer to any pregnant woman any medicine, drug, substance, or thing whatever, or shall use any instrument or other means whatever, with intent thereby to procure the miscarriage of any such woman, unless the same shall have been necessary to preserve the life of such woman, or shall have been advised by two physicians to be necessary for that purpose, shall be punished by imprisonment in the county jail not more than one year, or by fine not exceeding five hundred dollars, or by both.

A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

(Continued from Page 253).

The largest part of the discussion, however, was given over to peripheral nerve surgery alone. Sir Robert Jones presided at the conference and gave us the benefit of his comments on the papers presented and the influence of his always interesting and helpful personality. It was my privilege on this occasion to visit Sir Robert Jones' rooms at No. 11, Nelson Street, where he and Hugh Owen Thomas before him have cared for their thousands of patients. This in itself, was a most helpful and inspiring experience. The three days following this conference were spent in Ireland, visiting the Orthopedic Centers at Black Rock, Dublin and at Belfast.

(To be Continued.)

SOCIETY NOTES

Fifty doctors attended the mid-summer meeting of the Elkhorn Valley medical society, at the Country club, Norfolk, July 13, and participated in the most interesting session ever held in the twenty-five years of the society's existence. Every essayist was present and every paper was read and discussed. Dr. Herman L. Kretschmer, Chicago, was the guest of honor and gave a masterly paper on "Kidney and Ureteral Stone Surgery." Other papers presented were:

"The Present Status of Squint and Ocular Motor Imbalance," Dr. L. L. Nelson, Norfolk.

"Acute Osteomyelitis," Dr. A. C. Stokes, Omaha.

"Dextrocardia with the Presentation of a Case," Dr. F. X. Rudloff, Battle Creek.

"The Management of the Heart in Pneumonia," Dr. George Pratt, Omaha.

"Indications for Cesarean Section," Dr. Dwight C. Sigworth, Norfolk.

"Splanchnoptosis, Diagnosis and Treatment," Dr. Miles J. Breuer, Lincoln.

"Sudden Death in Infantile Eczema," Dr. Andrew Sinamark, Fremont.

At the meeting of the Madison county medical society, Norfolk, July 7, Dr. J. E. Summers, Omaha, discussed "The Acute Abdomen."

The Cass county medical society at a meeting, June 20th at Weeping Water had a round table discussion, led by Dr. H. M. McClanahan on "Infant Feeding and the Summer Diseases of Infants."

The Johnson county medical society met at the home of Dr. Dora Judkins-Davies, Tecumseh, in June.

The Burt county medical society at its June meeting had a symposium on focal infection.

Before the Box Butte county medical society, Alliance, July 7, Dr. J. E. Weyrens gave a lecture illustrated by lantern slides on stone in the kidneys.

HOSPITAL NOTES.

Next to Johns Hopkins, the Iowa University claims to have the largest teaching hospital in the United States.

The Protestant Episcopal Church has taken steps looking toward the rebuilding and enlargement of St. Luke's hospital, Kearney.

A new municipal hospital for Omaha is said to be one of the crying needs and officials directly concerned are working toward that end.

The General hospital, McCook, will pass into the hands of the Dominican Sisters in August, and will be used for hospital purposes until a new and modern hospital is completed. The Community hospital of the same place has ceased to exist, the building having been transformed into a rooming house.

An emergency hospital of fifteen beds has been provided at the Police Station, Omaha.

Looking forward to the need of an addition to the Presbyterian hospital, Omaha, the old Drexel home adjoining the hospital has been purchased by Dr. Karl Connell.

For Sale—Eastern Nebraska practice, established 15 years, $10,000.00 in 1920. Address Journal, 519 McCague Bldg., Omaha.

NOTES ABOUT THE DOCTOR.

Dr. John C. Busby, formerly of Omaha, has located at Belden.

Dr. D. D. Stonecypher, formerly of Omaha, has located at Peru.

Dr. W. S. Payne, for some time at Neligh, has located at Wayne.

Dr. A. W. Fitzsimmons, Omaha, has returned from a trip to England.

Dr. E. N. Smart and wife, Madison, are on a motor trip to California.

Dr. H. G. Brown has moved from Ulysses to Utica to practice his profession.

Dr. J. C. Miller, who has been at Garrison for six years, has moved to Surprise.

Dr. John F. Smith, for several years a practitioner at West Point, has located at Dodge.

Dr. John J. Kiefer, until a year ago a practitioner at Bancroft, has located at West Point.

Dr. H. J. Aberly, pioneer physician of Omaha has been a patient at the University hospital, ill of paralysis.

Dr. Kirkpatrick, for several years in practice at Sumner, has located at Creston, succeeding Dr. H. G. Morris.

Dr. J. E. Dunn, Arnold, suffering from inflammatory rheumatism, has been in the hospital for treatment.

Dr. G. B. Cross, Dewitt, suffered an infection of the hand late in June and was in a hospital for some time.

Dr. G. R. Taylor, late of Lexington, has located at Hebron where he had been engaged in practice up to two years ago.

Dr. W. J. Birkofer, Gothenburg, suffered a painful injury of the knee unintentionally self inflicted, while swinging an axe.

Dr. P. J. Flory and family of Pawnee City recently escaped serious injury when their auto was wrecked in a collision.

Dr. Wolford, some years ago a practitioner at Harvard, but latterly of Los Angeles, has returned to Harvard to practice.

Dr. R. E. Kriz, for some time a practitioner at Norfolk, has moved to Lynch and has become associated with Dr. G. B. Ira.

Dr. O. E. Liston is about to locate at Elmwood, succeeding Dr. J. S. Deering who leaves to take post graduate work in surgery.

Press reports indicate the use of the airplane by physicians in great emergencies is one of the features of medical history for 1921.

A son of Dr. Olga Stastny, former Omaha practitioner, now in Czecho-Slovakia, was killed in an airplane accident in Prague recently.

Dr. J. G. Marron, Brainard, was elected surgeon of the United Spanish War Veterans, department of Nebraska, at the annual state encampment.

Dr. J. F. Edwards, former health commissioner of Omaha, has been appointed to a position as examiner in the federal bureau of war risk insurance.

Dr. E. S. McCrea, Table Rock, and family had a month's outing at Hot Springs, S. D. This is the longest vacation taken by the doctor in a quarter of a century.

Dr. F. J. Rosenberg, Lexington, one of the "war horses" of the profession in Nebraska, was severely injured recently by an auto backing against him, pinning him against the side of the building.

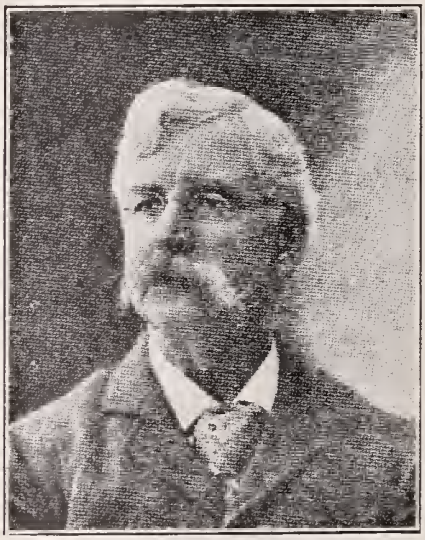
Dr. W. W. McKenzie, the first physician in Cedar County, recently visited the scene of his early labors. He was located near St. James from 1872 to 1883. He is now living in retirement at Morningside, near Sioux City.

It is somewhat unusual for four brothers to be physicians. Mr. and Mrs. J. O. Greusel, University Place, are the parents of four sons, all physicians, practicing in different states. The four visited the parents in July.

Among the Nebraska members who registered at the annual meeting of the A. M. A. in Boston were the following: E. J. Angle, Lincoln; J. M. Banister, Omaha; F. M. Barnes, Albion; Floyd Clarke, Omaha; W. O. Colburn, Lincoln; A. D. Dunn, Omaha; M. J. Ford, Omaha; Sanford R. Gifford, Omaha; J. A. Henske, Omaha; A. F. Jones, Omaha; John P. Lord, Omaha; Delia A. Lynch, Omaha; A. R. Mitchell, Lincoln; H. W. Orr, Lincoln; D. T. Quigley, Omaha; Adolph Sachs, Omaha; W. L. Shearer, Omaha; E. K. Steenberg, Aurora; Warren Thompson, Omaha; H. L. Updegraff, Omaha; E. A. Van Fleet, Omaha; W. P. Wherry, Omaha, and M. G. Wohl, Omaha.

NECROLOGY.

Dr. William B. Ely, Ainsworth, died of angina pectoris, June 23, aged 79. Dr. Ely was president of the Nebraska State Medical Association in 1901-2. He was president of the Northwestern Nebraska Medical Society at the time of his death. Dr. Ely was a native of Connecticut, a graduate of the medical department of the University of Michigan, Ann Arbor, 1878. After practicing in New York state for 11 years he moved to Ainsworth, where he practiced for 11 years, and later he engaged in practice for ten years at University Place. After retirement he returned to Ainsworth, where he died. Dr. Ely was a widely read and unusually scholarly man.



DR. WM. B. ELY

Dr. Lorene Painter, who was associated with Dr. B. F. Bailey at the Green Gables Sanatorium at Lincoln, died June 17, 1921, of acute miliary tuberculosis after a lingering illness.

Dr. Painter was born at Alliance, Ohio, April 20, 1890. She was left an orphan while a small child and her education was due entirely to her own efforts and perseverance. She graduated from the Boston University School of Medicine in 1917, and then became a member of the staff of the Green Gables Sanatorium, where she remained until the time of her death. During the time that she was at this institution, she endeared herself to those connected with it, and to those with whom she came in contact in other activities.

Dr. Painter was secretary-treasurer of the Nebraska State Medical Woman's League.

Dr. Wilmer O. Lewis, a member of the Interne Staff University Hospital, died Sunday morning, June 19, 1921, from a streptococcic infection following a post-mortem examination. The infection which resulted in his death was excessively virulent and almost from the first, recovery was a matter of grave doubt.

Wilmer O. Lewis was born at Edgar, Nebraska, May 8, 1891, graduated from Clay Center High School and from Nebraska Wesleyan University, receiving his A. B. degree in June, 1917. He entered the University of Nebraska College of Medicine in September, 1917, and graduated in Medicine June 6, 1921. Since November 12, 1920, he has been a member of the Interne Staff of the University Hospital.

As a student, an interne and a man among his fellow men, he was respected and honored by all with whom he came into contact. Faithful in the discharge of his duties, honest in his dealings, self sacrificing and unselfish in school and personal affairs, he was beloved by all. The College of Medicine, the University Hospital and Class of 1921 have suffered an irreparable loss.

The heart-felt sympathy of the entire student body, his classmates and the Faculty of the Medical School go to the surviving members of his family. The hearty good fellowship and the inspiration of the daily life of Wilmer O. Lewis have been taken from us, but his memory will endure.

(Irving S. Cutter, Dean).

Dr. Harry L. Arnold, well known OALR man of Omaha, died suddenly July 8, of organic disease of the heart, aged 51. He was a graduate of the Chicago Medical College, a member of the faculty of the Creighton Medical College and was on the staff of St. Joseph's Hospital.

Dr. W. C. Abbott, of the Abbott Alkaloidal Co., Chicago, died July 4, aged 63. Dr. Abbott was a pioneer in so-called alkaloidal therapy, was the author or joint author of several medical works and was the editor-in-chief of the American Journal of Clinical Medicine.

Dr. Frederick W. Lake, Omaha, died July 10, after a month's illness, aged about 45 years. He was a graduate of the University of Pennsylvania, 1901. He was a captain in the medical corps during the World War.

HYMENEAL.

Dr. John C. Whitehorn, Boston, and Miss Jeanette Miller, Fairmont, were married at the latter place, June 22. Dr. Whitehorn is a native of Nebraska and a graduate of Doane college.

Dr. Fred A. Humphrey, Omaha, and Miss Violet Osborn were married at Scottsbluff, June 20.

Dr. George Misko, Arcadia, and Miss Gladys Irene Whitford, Arlington, were united in marriage on June 7.

Dr. C. C. Copeland and Miss Della Scott, Beaver City, were married at the home of the bride's sister at North Platte, early in June.

Dr. John Dixon Carr, and Dr. Agnes Thorpe, both of Osawatomie, Kansas, were married June 15. Dr. Agnes Thorpe was formerly a practitioner at Greely and Omaha. Both parties are connected with the hospital for the insane at Osawatomie.

Dr. Herbert H. Davis, and Miss Olga Metz, Omaha, were married at All Saint's Church, Omaha, June 29.

Dr. C. G. Newbecker, Mill Valley, Calif., and Miss Grace Cahill, San Francisco, were married in June. Dr. Newbecker was an Ord boy and a graduate of the Ord high school.

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CONTENTS

Page
The Campaign Against Cancer, Francis Carter Wood, M. D., Director of the Crocker Institute for Cancer Research, Columbia University, New York City.... 261
Early Diagnosis of Cancer of the Digestive Tract, George W. Covey, M. D., Lincoln 267
The Earlier Diagnosis of Cancer of the Breast, David C. Hilton, A. M., M. D., F. A. C. S., Lincoln 269
Cancers of the Skin and Mucous Membrane, A. F. Tyler, B. Sc., M. D., F. A. C. P., Omaha 274
Precancerous Lesions of the Uterus, Palmer Findley, M. D., Omaha 278
Radiotherapy in Cancer, D. T. Quigley, M. D., Omaha 280
X-ray, Radium and Surgery in the Treatment of Cancer, R. L. Smith, M. D., Lincoln 282
A Civilian Surgeon's Story of the Great War, H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb. Formerly Lt. Col., M. C., U. S. Army 285
The Treatment of Cancer, Bryant.......... 289
Editorial 290
Abstracts from Current Literature.......... 291
General Notes 294
Society Notes 294
Hospital Notes 295
About the Doctor.......... 295
Necrological 296
Hymeneal 296
New and Non-official Remedies.......... 296

THE CAMPAIGN AGAINST CANCER.

Francis Carter Wood, M. D., Director of the Crocker Institute for Cancer Research, Columbia University, New York City.

In recent years four things have led to a great public interest in the cancer question. One of these is the very remarkable increase in the recorded frequency of cancer. Whether this phenomenon is due to improved diagnosis or to an actual increase in the number of cases is not settled, but that there is an increase is perfectly evident from the statistics of the Census Bureau. The second fact is the growing dissatisfaction among surgeons with the results of the operative treatment of cancer, that is, cancer in the late stages, and the feeling that if only the people could be taught to come to the surgeon when the disease is in an early phase much more satisfactory results would be obtained by operation. The third fact is the evident effect of the publicity campaign in the remarkable reduction in the mortality from tuberculosis, largely due to our fuller understanding of the cause and nature of the disease and to the widespread publicity campaign carried on for years by physicians and societies like the Association for the Study and Prevention of Tuberculosis. The fourth somewhat secondary influence upon the public interest has been the widespread propaganda concerning the value of radium and Roentgen rays in the treatment, if not in the permanent cure of cancer. Cancers differ from tuberculosis in being almost inevitably fatal if untreated, while a certain number of cases of tuberculosis in the milder stages may go on to permanent cure without any medical care; in fact, the statement has been made that everyone has a little tuberculosis. Of course, people with active tuberculosis have to take some definite course of treatment in order to get well, but many of the lighter cases are never even diagnosed, only accidentally discovered when the person dies of some other disease.

While it is improbable that even the most active publicity campaign will in the near future reduce the death rate from cancer to an extent comparable with that to which tuberculosis has been diminished, the question is, nevertheless, a very live one, because it is now fully appreciated that nearly 90,000 people die annually from cancer in the United States. Many are in the prime of life, active, and in good health otherwise, and the loss to the community of so many of its citizens in their full vigor is a serious one.

Now progress in the fight against cancer is being made under three headings:

1. Publicity. 2. Scientific investigation of the disease from the experimental aspect, with the hope of obtaining some knowledge of the ultimate cause of the disease, as yet unknown. 3. Improvements in methods of treatment, with the hope that some time probably in the far distant future a form of treatment may be developed which will be more successful than surgery or the use of radium or X-rays.

One of the foremost agents in the publicity campaign has been a society known as the Society for the Control of Cancer, which was organized in New York City some eight years ago by a body of public-spirited laymen and physicians to spread broadcast simple information concerning the importance of early diagnosis of cancer and of suitable methods for treatment. For while cancer in its early stages is extremely difficult to diagnose, it is only the early cases which can be treated successfully with good promise of permanent cure. Late-stage cancer can only be ameliorated by the use of radium or X-ray; surgery can do but little. The task which this society, therefore, set itself was to bring the community to the physician, because while cancer is difficult to diagnose even by the trained eye and hand of the expert, it is much more difficult for the sufferer to know that there is something the matter with him and that he should go to the doctor at an early stage of the disease. So the society began telling the public how to recognize symptoms which are suspicious; in other words, trying to bring the patient to the physician, for the physician cannot go out into the highways and hedges and collect the patients and examine them. The patient must come to the doctor. The society has also published a series of very important pamphlets for the education of the physician in the importance of the examination of people who are to all intents and purposes in good health, but who have some slight symptoms suggestive of cancer. For example, out of some 16,000 patients applying to a Boston dispensary with the symptoms of dyspepsia, nearly 1000 were found to be suffering from unsuspected cancer of the stomach. In many of these patients the disease had so far advanced that a permanent cure was impossible. If they had only come earlier a very considerable proportion of them could have been cured. It is also unfortunate but true that many of these people had seen a physician and had been treated for some time with simple remedies for the relief of their discomfort, so that it is necessary also to urge upon the general practitioner the great importance of seeing that every patient, for example, who has the symptoms of dyspepsia, has not a cancer. In other words, it is not so important to find out whether the patient has dyspepsia, which is a harmless though annoying condition; it is far more important to find out that the dyspepsia patient has a cancer. Dyspepsia is not fatal and cancer practically always is.

To further all these ends this society has, as I said, issued many pamphlets which are obtainable either free or for a minimal cost to cover the printing by writing to the secretary at 25 West 45th Street, New York City. It has organized committees in practically all the states and large cities of the Union to act as local centers for the distribution of this knowledge, and spends thousands of dollars a year in printing and mailing its pamphlets. It is well for the public to know that many hundreds of doctors throughout the country are giving a great deal of time in the preparation of such articles and in lecturing on the subject without any possibility of financial return, for I think it is still not realized how much real charity work is being done by the profession. The public opinion is still widespread that the doctor is largely a business man selling diagnoses and pills.

Among the things which physicians try to teach are the symptoms of cancer, but I cannot go into those for lack of time, especially as they are available in printed form so that you can study them at your leisure. We try to spread the knowledge that cancer in man is not hereditary, or that if there is such hereditary transmission, it is confined to a very few families, and that these families rapidly disappear and leave no descendants. This matter has been taken up in great detail by the life insurance companies, and they find from their records that a person is not any more liable to cancer because some one of his ancestors had it, than is one concerning whom no such history is recorded. They consequently do not ask any larger premium for insurance in those with a cancerous ancestry than in those who have no such history.

It should also be widely known that cancer is not contagious and that, therefore, the care of those suffering from the late stages of cancer is in no wise dangerous to the devoted nurse or members of the family caring for one of those unfortunates for whom there is no longer any hope. Also that it is not due to any form of diet or metabolic disorder, nor to a lack or excess of certain salts as has been widely advertised.

The society preaches, also, the importance of carefully treating any chronic irritation or ulcer. A sore on the lip or tongue which lasts more than a few weeks should lead the possessor at the earliest possible moment to consult a surgeon. The occurrence of a lump in any portion of the body, especially if the owner is over the age of forty, for we know that cancer is a disease of middle and old age, should likewise lead to prompt medical investigation. Many of these lumps are harmless, for there are a great variety of tumors, some of which never cause any trouble, some of which are merely annoying for mechanical reasons; others which are very liable to turn into cancer, and others which are the dread disease itself. The correct diagnosis of the nature of such a tumor is often difficult, and when such diagnosis cannot be made with any certainty, it is better to consent to some simple surgery which would remove the offending tumor, after which it can be submitted for microscopical examination and its exact nature determined. If it should prove to be harmless no great damage has been done. If it proves malignant, the proper steps can be taken to prevent recurrence.

It is probable that ultimately when all these matters are better understood people will go to their physicians annually as they go to their dentists. While good teeth are important, a decayed tooth is painful but not fatal. Why should we be more willing to seek advice from a dentist than from a doctor? Any man will submit to a very complete examination in order to obtain life insurance. Why should he not submit to a similar examination to obtain life? If cancer were not so inevitably fatal when untreated the situation would not be so serious, but as the disease is fatal and is so frequent, especially among those over 45 years of age, it is of utmost importance to consult a physician in order to eliminate any possibility of harboring a malignant growth. Physicians are not quite blameless in these matters, for they are apt to be somewhat lax in their examination of a healthy, robust man or woman who has some vague symptoms. Yet I think it is a safe statement that nearly one-half of the people over 45 who enter hospitals complaining of vague abdominal discomfort and loss of weight have cancer, for carcinoma of the stomach, intestines, or liver is by far the most frequent type.

Another phase of the activities of the Society for the Control of Cancer is the fighting of the quack. It is unfortunately true that the people of the United States are famous for the fact that they consume more patent medicine than any similar population in the world. But while all patent medicines are merely a means of obtaining money on false pretenses the most serious offense against law and mortality is obtaining money for a cancer cure, because so long as the patient is taking that cancer cure, just so long is the cancer growing, spreading, extending throughout the tissues of the body, until it is impossible to produce any cure. Surgery, radium, and X-ray are perfectly hopeless before an extensive cancer. It should, therefore, be remembered that the occurrence and growth of cancer is absolutely uninfluenced by any form of diet, by any form of internal medicine, or by mental healing, and that while some skin cancers can be cured by caustics, the discomfort and the scarring which result are far greater than those which follow surgery, and the number of cures is very much smaller. After the use of caustics, tumors very frequently return, and when they do return, they are very much more difficult to treat than when they are in the earlier stages.

Quacks are of many varieties. The least responsible perhaps are the ignorant persons who, because they have seen some harmless lump disappear, when treated by simple remedies, say that they have cured a cancer and continue to advertise medicine, or pastes, or poultices, or plasters, with the mistaken idea that they are of some use. Some pitiful examples as seen in my own experience are shown by the lantern slides. But the most dangerous quack is the physician who has gone wrong, and who sells his soul and other people's bodies for money. These quacks often use a semi-scientific jargon which imposes on the ignorant. They play up some of the defects of the medical profession, for we are all human after all, and incite animosities against the regular practitioner. They "cure without the knife." They reach the community in all sorts of devious ways. They advertise extensively in the daily papers and even in some of the low grade medical journals. The American Medical Association has done much to break up this latter form of evil, but the daily papers and some of the cheap magazines, and unfortunately many of the religious journals, are still offenders in this respect. The Christian Scientists and the osteopaths are rather inclined to leave cancer and broken legs to the surgeon, but we still see pitiful cases of neglect under Christian Science treatment and horrible extensions of the growth of tumors due to the manipulation by osteopathic or chiropratic methods. In a few months a tumor may be distributed all over the body by rubbing or manipulation, for it has long been known to the profession that the message of a tumor is the most dangerous thing that can be done to it, as it inevitably spreads it far and wide throughout the system. Calling attention to these facts are a few of the activities of this important society.

We shall turn now for a moment to the scientific side of cancer. There are in this country a number of laboratories whose chief work is the scientific study of cancer, and one of these I have the honor to direct. Its establishment was due to the great generosity of Mr. George Crocker, who left a portion of his large fortune for the investigation of this disease. In it many scientific men are working on the problem. In the laboratories we use animals with cancer, because they can be experimented upon. The human being afflicted with a non-fatal disease may be experimented upon to a limited extent with drugs, that is, if some new medicine comes out it is perfectly proper to try it with caution on patients suffering from a malady which there are reasons to believe it will influence. For example, the introduction of vaccination was an experiment; that of diphtheria antitoxin was another experiment; the treatment of pneumonia with serum another, that of colds with a vaccine another, but cancer is so fatal, as has been said, that no experiments can be carried out on this disease. Everyone who can be must be operated upon immediately, and those who cannot, must be offered one of the recognized forms of treatment which relieve the symptoms and check the progress of the disease. Radium and X-ray are the most effective agents in this emergency. But in animals, especially white mice and rats, which develop cancers of their own in very large numbers, we are justified in experimenting with their cancers in order ultimately to help mankind. The purely theoretical side of cancer research would not interest you, but some of the achievements of my own laboratory have been regarded by the profession as of importance. One of these was the demonstration that the massage of a tumor spread the growth with great rapidity. Another was the demonstration that the cutting of a small specimen from a tumor in an animal did not necessarily spread the disease. This is extremely important from the practical standpoint, as there are many small tumors in which a certain diagnosis as to whether they are cancers or not can be made only by microscopic examination. Other important discoveries are the determination of the exact amount of radium which is necessary to kill a cancer cell in a given time, and still another, the determination of the accurate dosage of X-ray. Previous to the undertaking of this work no one knew exactly how much of either of these physical agents was necessary to achieve the total destruction of a tumor. It was just as if the dose of morphine was not known, and some of it was poured out and handed to the patient to take regardless of the amount which would kill or cure. The determination of these dosages has shown that neither X-ray or radium can cure all cancers, for the amount required if a tumor is large and extensive is so great that the human body will not stand it. and if the attempt is made the result will be like the favorite newspaper joke that "the operation was successful, but the patient died." In other words, many cancers can be cured by X-ray or radium, but the patient will not survive the enormous doses required. While this is a disappointing result it is being confirmed by those who are using these remedies on human beings, and while the fact that we cannot cure all cancers is a misfortune, it should only stimulate to further research.

Another phase of laboratory activity which has been useful to the community has been the demonstration that most of the so-called cancer cures or cancer treatments are worthless, for if they will not cure cancers in animals, they will not cure them in man. The cancers of these little creatures are exactly like the cancers in man. Some are relatively harmless; some kill in a few months, but most of the types which we know in the human being are found in animals.

The third portion of my lecture concerns treatment. Surgery is universally recognized as the most effective means of combatting cancer, for in its inception the disease is local, but it is effective for permanent cure only in the early stages. With the increased knowledge of the danger of cancer and the importance of operation a great improvement has taken place in the last ten years in our results. In New York at least, where I can speak from my own experience, advanced cancers on external portions of the body, which can be recognized by the patient, are rare. Internal cancers of the stomach and intestines are still frequent in advanced stages so that anything but a palliative operation for the relief of the symptoms is impossible. To meet this, I believe, we will see in the future the development of a high degree of specialization in the treatment of cancer. Proper cancer surgery demands a very intimate knowledge of pathology, of the nature of neoplasms, of the direction in which the cells travel and the channels through which they pass, and the lymph-nodes where they are arrested for a period, for nodes act as filters and catch the cancer cells as they pass around the body. All of these depots must be removed. With the great advance which has taken place in surgery in recent years, the introduction of rubber gloves, improved methods of suture, and better anesthesia, it is now possible to do operations which ten years ago would not have been thought of. But the removal of an appendix or the amputation of a leg or the mere plastic repair of some damaged tissue is child's play compared with a proper operation on a metastasizing tumor. There will, therefore, have to be a concentration on cancer of all possible skill, and I think the point may be ultimately reached when a surgeon will limit himself to operations on a cancer of a particular locality and type, and that people will go to that man from various parts of the country for operation. We see already in Rochester, Minn., a Mecca for surgery of certain types. Distances in this country, though great in miles, are short in time. Cancer is not an acute disease in a sense. A day or two on a train makes little difference. I expect ultimately that the surgery of cancer will be confined to special institutions with especially trained staffs for operative and radiative, pre- and postoperative treatment, for similar specialization has taken place in other lines. Fractures are now usually treated by one man of a group; goiter by another. Surgery of the nose and throat and the eye and ear have long been carried on by special groups of workers. When our cancer surgery is done by experts with long experience the results will be much better than they are today. As an example, I know of one surgeon of great eminence who has never had a cure of cancer of the uterus by operation, and yet some specialists in this line report forty percent of cures. Part of this variability may be due to the chance distribution of cases, one surgeon not seeing the disease early, and part of the other man's success may be due to his wide training and specialization, for he confines himself to operations on this type of cancer. But from the patient's standpoint the difference in results is suggestive.

It is gradually being realized that the use of radium and X-ray also will be confined to experts and probably to institutions only. The great cost of modern X-ray apparatus will bar the ordinary practitioner from the use of this agent. Recent developments point to the necessity of even more powerful machines, the electrical pressures of which will be so great that the apparatus must be handled by someone who is an electrical engineer rather than a physician. Radium, also, on account of its very high cost, and there is no evidence that it will be cheaper in the near future, unless vast ore deposits be discovered richer than any now known, will have to be handled by groups of physicians who can afford the necessary capital for the heavy outlay required for an amount of this material sufficient to treat even a few patients. The limitations of these two types of treatment will also have to be thoroughly understood, for we are only at the beginning of our knowledge of their capacities.

It is perfectly certain that neither of these physical agents has the extraordinary curative capacities which have been attributed to them by enthusiastic workers who developed their use a decade or so ago. Even those who used to be enthusiastic are growing conservative, for cancer is a most disheartening disease to treat. It inevitably makes its own statistics; whether the patient is cured or not is ultimately determined with great accuracy, as practically all those afflicted with cancer die unless properly treated. Probably in not one case in a million is there a spontaneous cure. A recent collection made by one of my associates of all accurately reported spontaneous cures showed only a few hundred instances of this phenomenon, and by the irony of fate as the article appeared in print one of the supposedly cured patients died of a recurrence some five years after the disappearance of his tumor following an incomplete operation.

There are a number of difficulties in judging of the value of treatment by radium or X-ray. The first is that workers with radiation methods are apt to redefine the word "cure", using it to indicate the clinical disappearance of the tumor, and therefore report "cures" at the end of a few months. Another difficulty is that there is a widespread fear of cutting into tumors, based upon the unproved assumption that this process distributes tumor particles about the body. As a result, many tumors are treated as malignant and reported as cured, when a true neoplasm was not present. Three such instances have come under my observation within a few months. In one a clinical diagnosis of carcinoma of the breast had been made and frequent applications of X-ray given. The patient, however, became dissatisfied and had the breast removed; it was found to contain no carcinoma. The X-ray enthusiast, of course, claimed that this showed a cure but investigation of the dosage employed proved that if any carcinoma had been present in the organ it would have been stimulated rather than inhibited. There have also come under my observation two cases of "cured" carcinoma of the prostate treated by needling with emanation tubes. In both of these the removal of an unsuspected bladder calculus relieved the patient of all symptoms, and at the time of inspection there was no evidence of enlargement of the prostate. Again the optimist would say: Why is it not possible that both of these so-called carcinomata were cured? One evidence is that one of the most expert urologists in the country has reported that he has been unable to cure any carcinoma of the prostate by radiation. Another is that in a third case treated by the radium operator just referred to and reported in the literature as cured, operation necessitated by vesical obstruction revealed an extensive carcinoma despite the application of enormous quantities of radium locally. Such illustrations, of which I could furnish many, make us wish that the radium and X-ray enthusiasts would be a little more cautious in the use of the word "cured", and would give us the benefit of their complete statistics, as the surgeons do. The surgeons publish their failures as well as their successes and have ceased to think that a patient who has lived for a year after a surgical operation for carcinoma is of necessity cured.

What the ultimate development of radiation therapy will be it is of course impossible to prophecy. It would seem probable that three types of tumor might ultimately be transferred to the radiotherapeutist. One is lymphosarcoma, which the surgeons have learned is practically hopeless on account of the rapid and early generalization of the tumor. The second is the basal-cell tumor of the skin of the face, which yields admirably to radiation provided only that it does not contain squamous cells. Unfortunately, however, squamous cells are present in about ten percent of the basal-cell tumors, and necessitate enormously increased doses in order to effect a cure. The third type, which seems to be most promising, is carcinoma of the cervix. Carcinoma of the body of the uterus also yields easily to radiation, but as the results of operation are better, hysterectomy is to be preferred. But the cervical type of carcinoma seems in most instances to be of lower virulence than that found elsewhere, and it now seems likely that with suitable quantities of radium and possibly with X-ray, a certain small percentage of permanent cures, possibly ten percent, can be obtained. This is not so good as the best surgery but the operative mortality is lower.

The published statement that fifty percent of carcinoma of the cervix can be cured by radium without distress to the patient should, of course, be accepted with the utmost scepticism. Neither radium nor X-ray treatment is painless, and deaths have resulted from the use of either method. As larger and larger quantities are being employed in order to obtain better results the actual radiation mortality is apt to rise. There is no evidence, however, that it will reach the height of the mortality of the Wertheim type of operation. At the present time all of the tumors of the internal organs, such as stomach, liver, lungs, kidneys, etc., are quite beyond cure by radiation. Many of the bone sarcomata of the extremities also are extremely resistant and should be operated upon rather than radiated. The central giant cell sarcomata are in some instances curable though not in any higher degree than with surgery. Some of these forms, however, are not successfully treated either by radiation or by surgery. The fact that tumors of similar morphology, both carcinomata and sarcomata, may vary enormously in their capacity to resist radiation, though histologically identical, is too little appreciated by the student of malignant disease.

This mere enumeration of the difficulties of the cure of cancer by any means shows that the problem of greatly affecting the death rate from cancer is far from solved and the best hope for the future is to impress upon the public the absolute necessity for early diagnosis and prompt surgery in all cases of operable metastasizing tumors. Radium and X-ray are supreme in the field of palliation of inoperable growths.

EARLY DIAGNOSIS OF CANCER OF THE DIGESTIVE TRACT.*

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The reason we are constantly talking about the early diagnosis of cancer, whatever its location, is self evident. We do not know the cause of the disease and have only one means of treatment, namely, its complete removal by surgical means or its destruction by radium or the X-ray. Most cancers tend to spread either by direct extension to surrounding structures or by way of the blood vessels or lymphatic channels to more distant parts. The time at which this spread occurs varies in different kinds of cancer and in different examples of the same type. It is not always possible to say whether or not this spread has already occurred. Knowing these facts, it is therefore of supreme importance to recognize the presence of a malignant growth at the earliest possible moment, in the hope that it is localized to the original site and that its complete removal may be possible.

Consideration of these facts leads to one conclusion, namely, that in order to be successful in the removal of cancer, especially if hidden within the body, the physician must see the patient very early and must fully understand and accept the responsibility thus placed upon him. Neither of these propositions is as fully appreciated by the patient and possibly by some physicians as it deserves, and doubtless a great many untimely deaths are due to this lack of foresight.

I have gathered from our records forty-three cases of cancer of the digestive tract in order to place before you some instructive statistics in support of the facts given above. These cases are summarized in Table I, which you see before you. It gives you the age and sex of the patient, the location of the malignancy and the duration of symptoms prior to coming to us, as stated by the patient and recorded in the history. Tables II, III and IV are in a sense summaries of Table I, with the addition in Table IV of certain facts concerning the outcome of the cases.

Table II tells us that in this series of cases the digestive tract was attacked in men four times as often as in women; that is, eighty per cent of the cases occurred in males and twenty per cent in females.

Table III gives us the incidence of cancer in this group of cases according to age. You will note that 90.5 per cent of these occurred after the age of fifty years, and that the greatest incidence for any decade is from fifty to fifty-nine, when 39.5 per cent were found. Only two cases of the forty-three, or 4.8 per cent, were younger than thirty years. You many conclude from the above that if you are a male beyond the age of fifty years and have persistent digestive disturbance, your likelihood of having cancer is relatively great.

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*Read before the Nebraska State Medical Association, Lincoln, May 10, 1921.

If we now turn our attention to Table IV we will find some data concerning the outcome of these cases, chiefly those coming to us for diagnosis before symptoms had been present more than one year. We find that of the five cases coming in from seven to twelve months, 100 per cent are now dead of cancer. Those coming in from four to six months, inclusive, are seven in number, and six or 85.7 per cent are known to be dead, while the condition of the seventh is not known to us. Possibly 100 per cent of these are dead. Of the seventeen cases coming in three months or less, fifteen or 88.2 per cent are dead, and two are alive, of whom one is cured.

The difference in percentage of cures between those coming during the first three months and those coming later is not very encouraging, to be sure, but it does show some improvement. Let us consider for a moment a possible reason for these figures, and then some possible solutions for the difficulty.

In all probability many of these patients who stated that their symptoms began at such-and-such a length of time prior to their seeing a physician really meant, not that they had no symptoms of disturbance prior to that time, but that serious symptoms which partially or completely incapacitated them, or made their daily life miserable, began then. If they had realized that even minor symptoms referable to the digestive tract in their sex at their particular age often mean cancer, and that the cure of cancer depends almost entirely on the margin of time in the patient's favor, they perhaps would have consulted us weeks or months earlier and the percentage of mortality could have been decreased thereby. In order, therefore, to increase the chance of correct early diagnosis and cure of cancer of the digestive tract, the patient must go to the doctor at the first sign of disturbance if it tends to be at all persistent. This is increasingly urgent as we approach the age of fifty years.

We may go a step further. The physicians and many of the public who have been thinking along the lines of preventive medicine have advocated for years the periodic medical examination as a means of detecting diseases that come with advancing years before they have progressed to a point where no relief can be obtained. This is especially true in malignant disease, particularly in the hidden organs of the body. We know that cancers do occur and develop to an inoperable stage in some cases without symptoms. A percentage of these might be found and cured if periodic medical examinations were made.

Occasionally a cancer is discovered after the patient has been in the hands of another physician for some time and it seems that he should have made the diagnosis. There are physicians who, either through ignorance or indolence, fail to investigate these cases as their importance requires; or, not having the facilities for this study, fail to send them to those who have such facilities. But on the whole the majority of doctors are willing and able to make the proper study of these cases. If one doctor does not have all the required apparatus and laboratories, groups of doctors working together in one or another sort of association are able to give this service to those who seek it, at a price within the reach of the patient.

In the past, and to a lesser extent at the present, patients coming with serious complaints have been unwilling to permit as complete a study of their cases as seems necessary. Now they are rightly beginning not only to permit but to require the physician to make use of all his facilities in an effort to make more accurate and early diagnoses of their ills and to treat them more intelligently. They are getting away from the idea of going to the doctor's office and expecting a cursory examination, a box of pills or bottle of medicine for a meager fee. When they understand fully the service that should be given them and the advantages they gain from this increased efficiency, they will be only too willing to undergo the complete physical examination, the examinations of blood, urine and stools, the analysis of stomach contents, the X-ray examination, and whatever else is necessary to the proper study of these cases.

Let me call to mind, therefore, in closing, that the responsibility in cases of cancer of the digestive tract is divided between the patient and the doctor. If the patient is approaching fifty years of age, particularly if of the male sex and has any persistent symptoms of disturbance of stomach or bowels, no matter if slight, he should consult his physician. Better yet, at this age the apparently healthy man or woman should have periodical medical examinations. The doctor, on the other hand, must use every necessary means at his command to rule out malignant disease in this class of cases.

TABLE I-a.

Case No.	Age	Sex	Duration Symptoms	Diagnosis
A 467	65	M	8 to 9 years	Cancer of lip and glands of neck
A 1131	58	M	2 months	Cancer of lip
A 4740	67	M	Indigestion 20 years	Cancer of stomach
A 3897	74	M	4 years	Cancer of lip
A 6128	30	F	13 yrs ago; recurred 3 yrs ago	Cancer of lip
A 2427	58	M	6 weeks	Cancer of mouth
A 2781	64	F	3 months	Cancer of gum
A 1559	63	M	3 years	Cancer of larynx
A 274	56	M	4 years plus	Cancer at pylorus
A 1474	57	M	5 years	Old history of ulcer; now cancer at pylorus

TABLE I-b.

Case No.	Age	Sex	Duration Symptoms	Diagnosis
A 807	72	M	6 months	Cancer at pylorus
A 5659	70	F	8 months	Cancer at pylorus
A 283	78	M	3 months	Cancer of stomach
A 351	67	M	4 months	Cancer of stomach
A 566	54	M	5 yrs ulcer symptoms; 8 wks cancer symptoms	Cancer of stomach
A 1184	19	M	1 month	Cancer of stomach
A 1630	66	M	2 months	Cancer of stomach
A 1855	64	M	3 months	Cancer of stomach
A 1873	72	F	36 yrs ulcer symptoms	Cancer of cardiac end of stomach
A 738	50	F	1 year	Cancer of stomach
A 942	76	M	8 months	Cancer of stomach

TABLE I-c.

Case No.	Age	Sex	Duration Symptoms	Diagnosis
A 1957	61	M	Like ulcer 12 yrs	Cancer of stomach
A 2297	65	F	Less than 3 months	Cancer of stomach and pancreas
A 4943	80	M	2 years	Cancer of stomach
A 4965	57	M	Yrs indigestion; 5 months bad	Cancer of stomach
A 5156	54	M	6 months	Cancer of stomach
A 5871	72	F	1 month	Cancer of stomach
A 1825	50	M	1 year	Cancer of stomach
A 6097	76	M	1 month	Cancer of stomach
A 6797	76	M	6 months	Cancer of stomach
A 6848	56	M	6 months	Cancer of stomach
A 6951	54	M	6 weeks	Cancer of stomach

TABLE I-d.

Case No.	Age	Sex	Duration Symptoms	Diagnosis
A 2417	57	M	3 weeks	Cancer of stomach
A 2269	68	F	?	Cancer of hepatic flexure of colon
A 6142	59	M	1 year	Cancer of transverse colon
A 4884	83	M	2 years	Cancer of cecum
A 1389	57	M	3 months	Cancer of rectum
A 2205	50	M	2 years	Cancer of rectum
A 505	47	M	3 months	Cancer of rectum
A 4209	67	M	?	Cancer of rectum
A 5526	55	M	6 months	Cancer of rectum
A 5654	40	F	5 years	Cancer of rectum
A 6310	55	M	3 months	Cancer of rectum

TABLE II.

Males	34 cases, or 80 per cent
Females	9 cases, or 20 per cent

TABLE III.

Age	Number of Patients		
70—80	11		or 25.5 per cent
60—69	11		or 25.5 per cent
50—59	17		or 39.5 per cent
40—49	2		or 4.7 per cent
30—39	1		or 2.4 per cent
20—29	0		or 0.0 per cent
10—19	1	(19 yrs old)	or 2.4 per cent
Total	43		100.0 per cent

TABLE IV.

	Number	% Known Dead	% Known Alive	% Known Cured	% Not Known
Symptoms present more than one year	12	----	----	----	----
Symptoms present 7-12 months inclusive	5	100.0	0	0	0
Symptoms present 4-6 months inclusive	7	85.7	0	0	14.3
Symptoms present 1-3 months inclusive	17	88.2	11.8	5.9	0

THE EARLIER DIAGNOSIS OF CANCER OF THE BREAST.*

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The earlier diagnosis of cancer of the breast depends on two factors—first, the public education and the development of enthusiastic cooperation among women with our profession in this matter, and second the more expert use on our part of diagnostic methods.

Public education and cooperation of the laity and the profession is of fundamental importance more especially in cancer of the breast, the patient herself being able to recognize the earliest signs of disease at a time when skillful treatment will afford the maximum number of cures or the greatest degree of relief.

With the exception of tuberculosis, cancer is the greatest destroyer of mankind and cancer of the breast makes up about fourteen percent of the mortality from cancer in women of the United States. Institutes for cancer research with hospitals and dispensaries connected for the earlier diagnosis of cancer are being established. After the age of forty cancer seems to have displaced tuberculosis as the principal cause of death. It is quite as necessary that states and municipalities provide institutions to check the growth of cancerous disease as to have established sanatoria and other instrumentalities for the prevention and cure of tuberculosis. Cancer is a social-medical problem as is syphilis, alcoholism and other evils. For the latter, governmental, philanthropic and scientific agencies have done much to suppress their virulence and to check their progress. On the other hand cancer has only recently aroused general organized interest for the purpose of combat while its recorded mortality is mounting higher and higher and its incidence is recognized to be alarmingly greater.

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*Read before the Nebraska State Medical Association, Lincoln, May 10, 1921.

In dealing with cancer of the breast the types are so numerous, the clinical course so variable, the spread so diverse, the diagnostic problems so complex, and "the sacrifice of tissue so great" that in the majority of cases a suitable adjustment of means to ends is most difficult. This "sacrifice of tissue so great," this "pound of flesh," is the substance of the suspicion, the fear and the distrust that has hitherto made an impasse between the general public and the profession, their only refuge from present suffering and certain death. From the first the profession must obtain the confidence, good will and cooperation of the feminine public or its opportunity to extend timely aid and succor will be foreclosed against it. Women must be taken care of in such a manner that their minds will be disabused of the fear that doctors always cut off a breast for every lump discovered, if given a chance. Some of you may have heard it said "A few cents worth of cotton will answer for the breast, why hesitate to remove it?" This half truth has a double edge and cuts both ways. If it were cancer to take the breast would not cure it and whether it may or may not be cancer such an anti-social flippant attitude would effectively bar the willing approach of a dying public from its only refuge.

Roffo of Buenos Ayres ascertained that in the hospitals of Buenos Ayres only four percent of persons affected with cancer presented themselves for treatment immediately after the first symptoms declared themselves, and that sixty percent did not call in medical advice until the disease had made such headway that it was impossible to operate, that is to say, about the sixth month from the time of its appearance. The earlier diagnosis of breast tumors is the only means of obviating unnecessary breast removals and of making necessary breast removals worth while. The patient herself must take the initiative and unless we seem sympathetic as well as skillful the initiative will come too late.

As to the second factor in the earlier diagnosis of cancer of the breast—the more expert use on our part of diagnostic methods—we have several things to unlearn, and an entirely different type of cases to try our skill than presented themselves a generation ago.

The surgeon of today must train himself to naked eye diagnosis without frozen sections in a much larger percentage of cases than confronted him a few years ago. Women are coming with earlier breast lesions and the percentage of benign lesions to be recognized is increasingly greater. The older and more typical cases of schirrus and medullary cancer with all characteristic signs freely displayed are becoming fewer every year. Even exploratory incisions and tissue sections bring increasing dilemma for we now see patients so early that their lesions are lacking in classical diagnostic details.

Our diagnostic methods fall into two groups, first, those which may furnish positive evidence of cancer, and second those which furnish negative evidences only.

The methods supplying positive evidences are:

(a) the clinical method,
(b) the gross anatomic method, and
(c) the histologic method.

The methods supplying only negative evidences are:

(d) the bacteriologic method,
(e) the serologic method,
(f) the therapeutic method, and
(g) the Roentgenologic method.

In connection with the second group of methods it is important to keep in mind the valuable evidences to be found in bacteriological examinations of secretions from the nipples or from sinuses, by therapeutic tests and the Wassermann reaction in suspected syphilis, by the occasional use of the tuberculin test in tuberculosis, and by a radiogram of contiguous bone structures when the breast is secondarily invaded by lesions therefrom. All of these, however, are practically negative as to cancer.

As to the first group of methods the clinical method of diagnosis is by far the most valuable as cases ordinarily run and our first duty is to learn to read the clinical picture of incipient cancer. If this method gives us a diagnosis of cancer beyond a reasonable doubt the radical operation should be invoked forthwith in operable cases. Failing in this, however, the gross anatomic method should be resorted to with or without the histologic method. The present day surgeon must know how to recognize cancer from normal tissue and from the tissue of benign lesions at the edge of his knife. He must be versed in the gross anatomy of cancer. One who is skilled can arrive at a reasonably correct diagnosis of malignancy by this method in a very large percentage of cases in which the clinical method fails. He must, however, use it with rare discretion, sealing the routes of absorption by the cautery or by an escharotic throughout his exploratory field.

When the clinical and gross anatomic methods fail it is useless to deny that the histologist can recognize cancer under the microscope and that his services are indispensable to a diagnosis of malignancy in many cases. A review of current literature brings out the fact that many capable surgeons and pathologists are wasting much of their rare ability in praising one method and deprecating another. This is very unfortunate because each method has its field of usefulness which is not by any means entirely overlapped by one or by both of the other methods. In the battle against cancer these three diagnostic methods should be held in the light of various arms of the service, each contributing to success, the clinical method being that arm which usually holds the line unaided.

The clinical method of diagnosis consists in the correct interpretation of the clinical signs presented by breast lesions. Those signs manifested at the onset of cancer naturally fall into two groups, those showing within the breast and those showing without the breast. The first group of signs in the order of their importance is as follows (a) Dimpling and fixation of the skin over the growth or fixation of the growth to the fascia. This "skin" sign follows atrophy of the subcutaneous fat and fixation always follows infiltration of the surrounding tissues. (b) Sudden retraction of the nipple. This is not the ordinary retraction found following adolescent mastitis or other diseases under the areola, much less retractions which have no obvious pathological foundation. This sign refers only to the unexpected and very noticeable retraction over a short period of time. This again is an incident of the infiltration process of malignancy. (c) The "feel" of the tumor. This sign is of particular value in diagnosing cases of chronic cystic mastitis. (d) Discharge from the nipple. This sign is of particular value in diagnosing intercanalicular papillomata. (e) Pain. It is not an early sign of malignancy. (f) Ulceration. It cannot be depended on in the differential diagnosis of malignancy. (g) Oedema of the skin. It is not an early sign of malignancy. When due to cancer it signifies rapidity and a bad prognosis. (h) Rate of growth and (i) Constancy. Cancer is a progressive and constant tumor.

The second group of signs are: (a) axillary adenopathy, (b) supraclavicular adenopathy, and (c) the other breast.

Enlargement of the axillary glands has been overrated as a diagnostic sign of cancer for these glands are often slightly enlarged by various causes. The axillary sign is of more importance for prognosis. If the cancer is entirely confined to the breast the radical operation properly done may be expected to cure an average of four in five cases, but if the axillary glands have been invaded it may be expected to fail to cure four in five cases.

Tumors of one breast are prone to be like tumors of the other breast in near age. If a patient has had cancer of one breast followed by a growth in the other breast the latter is likely to be cancer. If there is a history of a disappearing tumor having recently existed in the other breast there is a strong presumption of the one under consideration being a benign cyst.

By these clinical signs we are supposed to cover the field of differential diagnosis and to determine the case as being one of cancer or not.

This field of inquiry takes in a survey of the following groups of cases:

Paget's disease,
Epithelioma,
Tuberculosis,

- Syphilis,
- Sarcoma,
- Actinomycosis,
- Sporotrichosis,
- Encapsulated solid tumors;
    - cystic adenoma,
    - intracanalicular myxoma,
    - fibroadenoma,
- Noninfiltrating cysts;
    - simple,
    - papillomatous,
    - galactocele,
- Abscess;
    - acute pyogenic,
    - chronic pyogenic,
    - tubercular,
    - gummatous,
- Chronic mastitis (infiltrating);
    - cyclical,
        - adolescent mastitis,
        - adult hypertrophies,
        - senile involutions,
    - cystic mastitis,
        - intracanalicular papilloma,
        - small cystic,
        - large cystic.

It is not the purpose of this paper to take up the details of differential diagnosis except in so far as to point out the major problem in the interpretation of clinical signs. The major problem presents itself particularly in cases of infiltrating lesions of the breast other than cancer. The most important signs of cancer are due to infiltration of surrounding tissues and any non-cancerous lesion which infiltrates exhibits some appearances of cancer. These infiltrating non-cancerous lesions are certain abscesses and various types of chronic mastitis. Acute pyogenic infection may be simulated by acute lactation carcinoma, mastitis carcinosa. With its rapid infiltration and swift growth it exhibits many of the reactions of acute phlegmon. Chronic lactation abscess can scarcely be differentiated in some cases from scirrhus. In almost all cases of pyogenic infection, the history of the case is of inestimable value if the lesion strongly resembles cancer.

Chronic mastitis furnishes the major portion of the so-called border line cases. Many forms of it are recognized and variously classified. Some of these are chronic adolescent mastitis, senile involution of the breast and chronic cystic mastitis taking on the form of the small or large cystic varieties or of the intracanalicular papillomata. These chronic mastitides ordinarily present a few characters peculiarly their own and a different emphasis on the cancer signs which they may themselves produce than are found in carcinoma.

Adolescent mastitis develops commonly at puberty and may recur later in life. It is a phase of the cyclical changes in the breast from youth to old age. It is incident to epithelial proliferation and the normal changes in the breast at puberty. It is characterized by discomfort and pain and induration about the areola. Pain is not a leading symptom of early cancer but is a very pronounced symptom of adolescent mastitis. Palpation over the area of induration gives a granular "feel" which is rather peculiar to this lesion.

Chronic cystic mastitis comes into evidence during the woman's thirties and from that time after. We distinguish for practical purposes the three principal types of it mentioned above.

Intracanalicular papilloma is a type of papillomatous cyst in the duct beneath the nipple or deeper and is characterized by bloody discharge from the nipple. A bloody discharge from the nipple is not commonly characteristic of cancer but is present in this particular lesion. A cystic breast with a bloody discharge obtained on pressure from the nipple is in the beginning benign and should be so treated unless major characteristics of cancer are also present.

The small cystic type of chronic mastitis is characterized by small cysts. It is another painful lesion imparting on palpation a "shotty" feel. This also is at first benign and should be so considered unless major indications of cancer are also present.

The large cystic type of chronic mastitis presents a large cyst, usually contiguous to an area of small cysts. This is the so-called "blue dome" cyst. The large cysts of the breast with smooth walls and containing a bloody fluid or grumous material are commonly malignant. Those showing papillomata but without a bloody fluid are commonly benign. In the differential diagnosis of the large cysts an intelligent exploratory incision adds valuable evidences to be gained by a knowledge of gross anatomy. Papillomatous cysts are to be judged by the appearance of the papillomata, the fluid contained and evidences of infiltration, or of encapsulation at the base of the papillomata.

The one most dependable sign of cancer is dimpling of the skin over the lesion, a result of infiltration coincident with atrophy of the subcutaneous fat. Sudden retraction of the nipple is another phase of the same process. An additional phase of the process not so easily determined is fixation of the growth to underlying fascia. On the contrary, pain, discharge from the nipple, ulceration, and axillary adenopathy are not characteristic signs of early cancer. If the "skin" sign is present in any degree at all and there are not sufficient reasons to consider the growth benign, it should be diagnosed cancer on clinical grounds alone. If it seems to be a border line case wherein the "skin" sign is not present the exploratory incision should be judiciously used to determine whether cancerous invasion may be in progress regardless of the failure of clinical diagnosis in the case.

If the diagnosis cannot be established with reasonable accuracy on clinical and gross anatomical grounds a histologic examination should be resorted to in the course of the operation, and it can do no harm to check the clinical and gross anatomical diagnosis by histologic diagnosis routinely, for in skillful hands such team work will increase therapeutic accuracy and if carefully recorded contributes to the source literature of cancer. Each surgeon must develop for himself his own method of procedure, some naturally are more observing, more careful and more expert than others. Some will do better work with a clinical diagnosis only than many other good men and their operating teams may with all three methods. However, that is a personal matter. It has nothing to do with the intrinsic value of any method. Each method is an instrumentality peculiarly useful in its own way and when properly used or properly combined with the other two will often establish a diagnosis otherwise impossible.

No incision into the growth should ever be made for the purpose of diagnosis only. No incision into the growth should ever be made if a reasonably strong presumption of cancer can be established clinically. When the tissues are cut into it must always be at the time the final operation is done and at no other time. Bloodgood states that the two stage operative procedure—the one for diagnosis and the other for treatment reduces the chance of ultimate cure in the case from 80 percent in tumors confined to the breast exclusively to 10 percent.

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CANCERS OF THE SKIN AND MUCOUS MEMBRANE.[*]

A. F. Tyler, B. Sc., M. D., F. A. C. P., Omaha, Neb.

The subject of this paper is limited to a certain type of cancer which can be easily seen and felt at the very beginning of its development. Due to this fact, this type of cancer should be recognized at a very early stage. The fact that many patients suffering from cancer of the skin and mucous membrane come to us late in the development of the disease proves to us that the importance of early positive diagnosis of malignancy has not been sufficiently realized. When these cancers first appear they are purely local in nature and because of the fact that they are local in nature they are easily curable in most instances, squamous celled carcinoma of the skin and mucous membrane being the one exception. It appears to us that there are certain forms of skin lesions which we should have definitely fixed in our minds as precancerous, as these skin lesions when neglected become definitely malignant. This fact should emphasize to us the importance of getting rid of these precancerous conditions while they are still benign instead of waiting to make a diagnosis of malignancy before attacking them (Fig. I). The fact that so many patients come late in the progress of the disease is proof of the lack of knowledge by the profession of the serious character of these precancerous conditions. It is also evidence of the lack of common knowledge of the laity that any skin

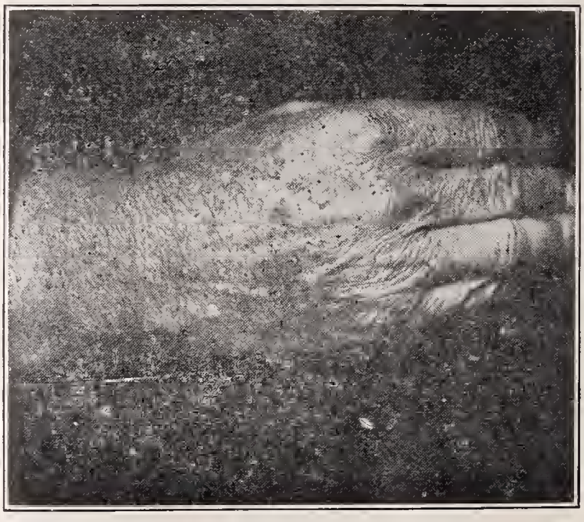

Fig. I.—Multiple keratoses on dorsum of hand. A precancerous lesion which should always be gotten rid of at this stage.

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[*] Read before the Nebraska State Medical Association, Lincoln, May 10, 1921.

lesion should be brought to the attention of a well trained experienced physician at once. In fact, we feel that if we could fix in our minds the fact that any lesion of the skin which is indurated and does not heal under proper medical treatment within a few weeks time should be considered as malignant.

TYPES OF CANCER.

In 1900 Krompacher definitely established the fact that the basal celled type of skin cancer arises from the basal cells of the Malpighian layer, from the ducts of sweat, hair and sebaceous follicles. Later, Borrmann made the statement that basal celled cancer of the skin arises from misplaced superfluous embryonal cell groups derived from the skin and its appendages. This pathology is so definitely proven by these men and many others that we think it goes without equivocation.

Basal celled cancer of the skin is characterized by slow growth, by spreading more rapidly laterally than downward into the skin and by the fact that metastasis occurs very late and very seldom. This is the most benign type of skin cancer with which we have to deal. It is nearly always located about the face above a line drawn through the angles of the mouth. Occasionally one will find it on the skin of the neck or the hands or other parts of the body. (Fig. II).

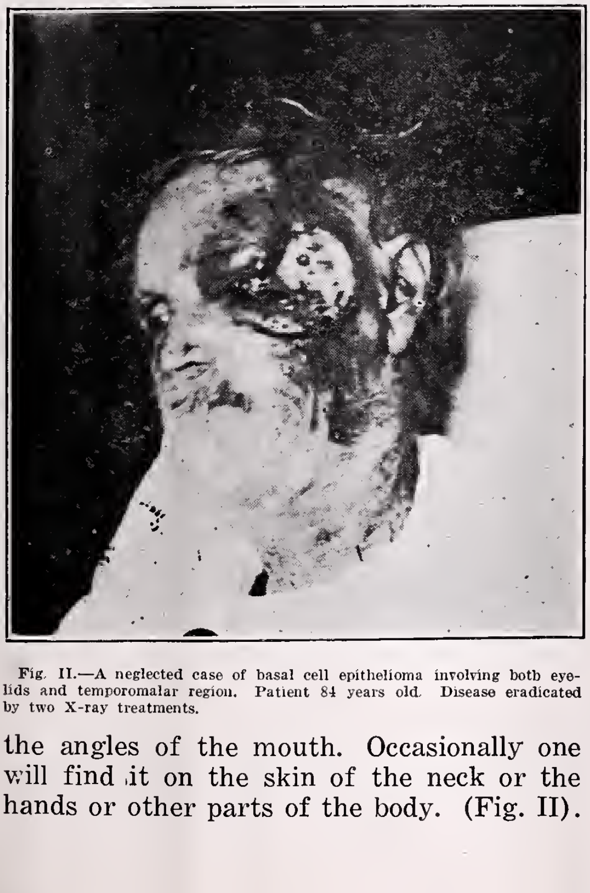

Fig. II.—A neglected case of basal cell epithelioma involving both eyelids and temporomalar region. Patient 84 years old. Disease eradicated by two X-ray treatments.

The squamous celled type of skin cancer is usually found at the mucocutaneous juncture or on the mucous membrane. This type arises from the epidermal layer of the skin and is characterized by the presence of adult squamous cells, hornification and pearl formation. This type of skin cancer manifests itself in two ways; first, the papillary type which shows on the lip at the mucocutaneous juncture and has the appearance of an ordinary papilloma. This, however, continues to grow, later becomes indurated and is definitely malignant. (Fig. III). The second type is flat and spreads out over a considerable area of the skin of the mucocutaneous surface and is more malignant in its character than the preceding type. The flat type of squamous celled cancer is quite destructive and is hard to eradicate. (Fig. IV). The squamous celled types of cancer are characterized by slow growth and little destruction as compared with the kind produced by the basal celled type, resistance to any form of treatment, great tendency to recur and early metastasis. By comparing the characteristics of the squamous celled type of cancer with the basal celled type of cancer, one cannot fail to draw the conclusion that the basal celled type of cancer can be easily cured by many different methods of treatment while the squamous celled type of cancer is difficult to cure, no matter what type of treatment is applied. This knowledge should aid

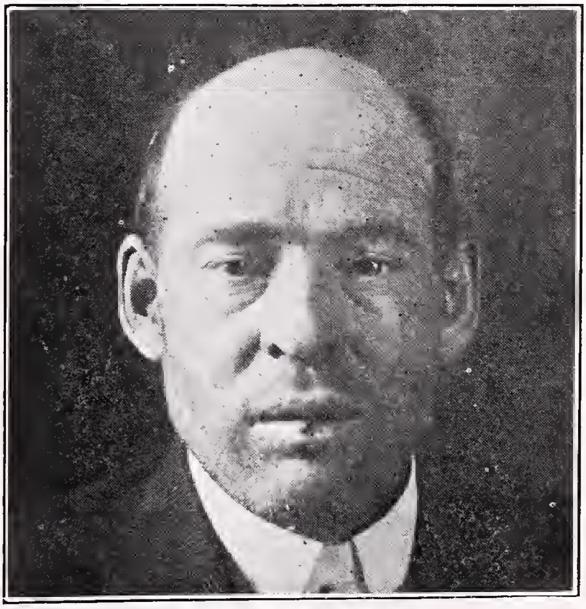

Fig. III.—Papillary type of squamous cell epithelioma at mucocutaneous juncture. Duration two years, eradicated by electrothermic coagulation and X-ray treatment.

us materially in giving the patient a prognosis and should guide us in the vigor of our treatment.

There is another type of precancerous lesion which occurs on the mucous membrane of the mouth and tongue to which I wish to call especial attention because of the fact that there seems to be considerable confusion in the minds of the medical profession as to whether it is really a malignant condition. It is important for us to recall that this is a precancerous condition, always becoming malignant, and that it is one of the most resistant forms of cancer which we have. This type about which I speak is leukoplakia. This manifests itself first, as a milk white color, showing on the mucous membrane. At this stage there is no evidence of induration and because of this fact many medical authorities think it is syphilitic in character. This is due to the fact that many patients who have this lesion have either a history of syphilitic infection or a positive Wassermann reaction. We feel that this emphasis on the syphilitic character of leukoplakia is entirely out of proportion to the clinical evidence which is at hand. It is possible and frequent that patients suffering from various lesions are also suffering from syphilitic infection, but in my experience it has never failed that leukoplakia developed into cancer. A concrete illustration of this fact came to my attention recently. A physician brought in a relative to me for consultation. The patient was suffering from an extensive leukoplakia of the cheek and tongue. I told the doctor that this was definitely malignant and that it should be treated as such, whereupon he replied that the man had a positive venereal history and four plus Wassermann reaction and he was of the opinion that it was syphilitic in character. Consequently, the patient was treated for syphilis, but a few months later the doctor came into my office and informed me of the correctness of my previous opinion, saying that the relative had just died with an extensive cancer of the mouth and tongue.

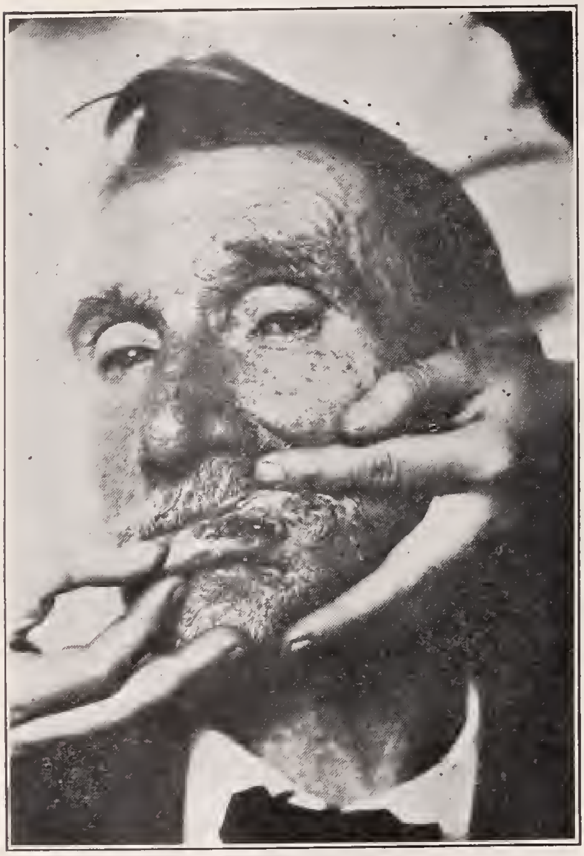

Fig. IV.—Flat type of squamous cell epithelioma, several years duration, required vigorous treatment. Note lateral extension and destruction as distinguished from Fig. III.

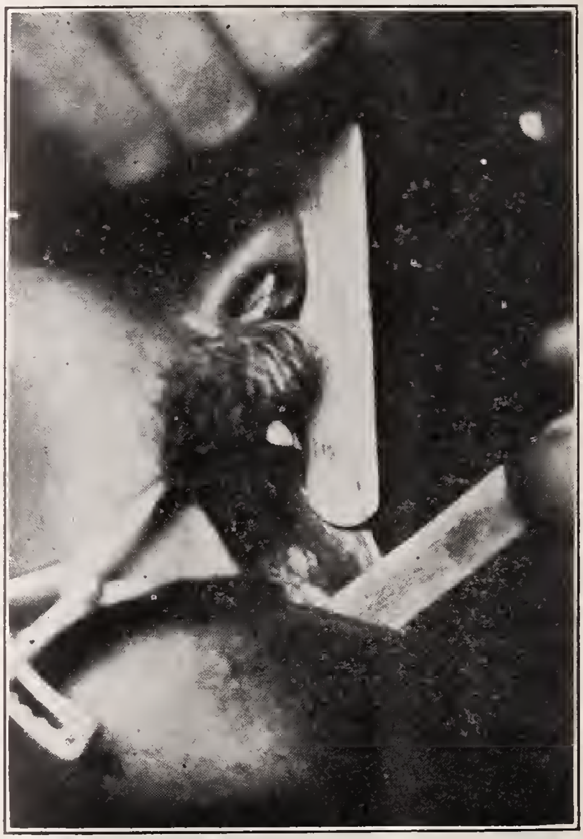

Fig. V.—Leukoplakia which has undergone malignant degeneration, involving the inner surface of the cheek and alveolar process from lateral incisor to angle of jaw. Note pearly white appearance and cornification. Rapidly fatal in spite of vigorous treatment.

Many other such illustrations could be

cited but one more will be sufficient. A patient came to me at the time that the milk white stain was beginning to show hornification. The local lesion was treated and cleared up. A few months later the patient came in saying that he had developed a sore in the roof of the mouth. On examination we found an extensive, indurated, destructive process involving the left superior alveolar process. On more careful examination we found the infiltration involved the entire left maxillary sinus and over the entire side of the left cheek. He was given the best possible treatment but in spite of this the growth developed very rapidly and carried him off in a few weeks. I wish to make the statement again that the medical man should definitely fix in his mind that leukoplakia is always malignant no matter what other systemic infection may be present at the same time. The following simple rules should be borne in mind when a patient presents himself with a lesion on the skin or mucous membrane. If the lesion is scaly, of considerable duration and indurated, it should be gotten rid of as bearing the earmarks of at least a precancerous condition, if not of definite malignancy.

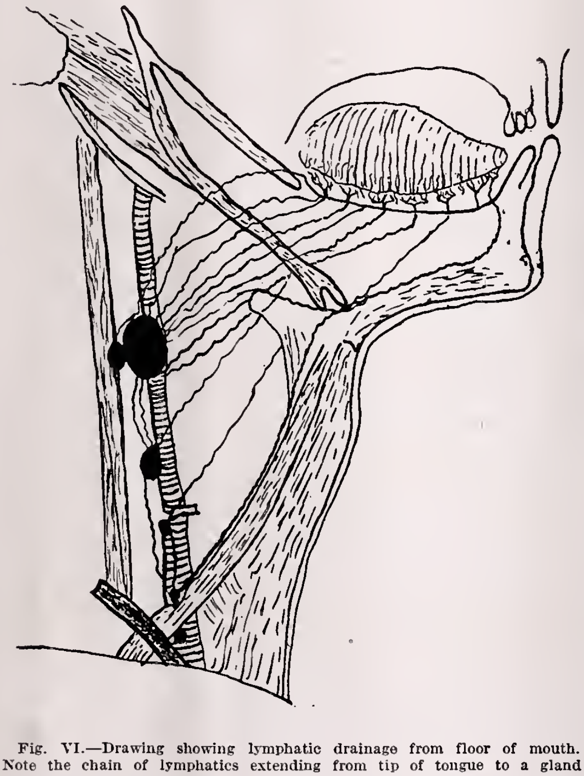

Fig. VI.—Drawing showing lymphatic drainage from floor of mouth. Note the chain of lymphatics extending from tip of tongue to a gland just above the clavicle.

PRINCIPLES OF TREATMENT.

The local growth must always be completely destroyed. We mean by this that it must not only appear to the eye to be eradicated by treatment but all of the cell nests must have been destroyed. These little growths extend around the terminal arterioles and are especially well nourished down between the branches of the arteries. These little nests are so well nourished that they are the last to die and it is usually these cell nests at the bifurcation of the small arteries which remain after treatment and cause local recurrence. Since we are so well aware of the fact that cancers of the skin and mucous membrane metastasize chiefly through the lymphatic circulation, we should not only be cautious to treat the local growth but also all draining lymphatics. This means that if we have a growth in the tongue we should bear in mind that all the lymphatics draining the tongue should be dried up or removed so as to prevent metastasis taking place through them. It may have slipped the minds of many of us that there is a definite lymphatic chain extending from the tip of the tongue down to the small glands just above the clavicle. (Fig. VI). We should also be aware that certain types of cancer metastasize through the circulation as well as through the lymphatic areas; so when we are making examination of the lesion we should not squeeze and rub it more than is actually necessary to get the information which we need for treatment. There is no doubt in my mind that many metastases occur through the circulation brought about by too vigorous manipulation at the time of the examination or operation.

After treatment is completed the patient should be kept under observation for at least one year with definite warning to return at any time in the future when there is the least thing going wrong. For our own education and for the better care of our patients, I think it would be well for us to establish a definite follow up system so we can keep in touch for a number of years with patients whom we have treated for malignancy. If this accomplishes nothing else it will at least take the conceit out of us.

PRECANCEROUS LESIONS OF THE UTERUS.*

Palmer Findley, M. D., Omaha, Neb.

We are told that the "cancer problem" is the early recognition of the growth while it is yet localized and, therefore, removable in its entirety. May we not extend the scope of the problem and add to the recognition of cancer in its earliest stages of development the identification and the eradication of precancerous lesions. It is true that cancer never develops directly from healthy tissues but rather from tissues that have undergone definite and often long standing structural changes. These are the so-called precancerous lesions. To illustrate this dictum we find in the skin that cancer develops from pigmented moles and from surfaces long irritated by the X-rays or from mechanical friction as in the case of the chimney sweep. In the mouth we find in the irritated tissues about a jagged tooth a favorite seat of cancer; in the stomach the ulcer which has existed for a variable time; in the breast the cracks and fissures about the nipple, in the rectum hemorrhoids and fissures and in the gallbladder the presence of stones. These and many other examples could be given to emphasize the well known fact that long continued irritation predisposes to cancer.

And we ask—what are the precancerous lesions of the uterus and what should be our attitude toward them as forerunners of cancer? It is rare indeed that cancer develops in the cervix of a nulliparous woman. Not more than three percent of all cancers of the cervix are found in women who have not born children and in this limited number, in almost all cases, the cervix has been previously injured by instrumentation or has been long irritated by cervical discharges. We are, therefore, led to look to the incidences of child bearing for the underlying cause of cancer of the cervix and we find in all literature that lacerations of the cervix form the groundwork for cancer. This is unquestionably true but we must go one step further and note the sequence of such lacerations because the uncomplicated laceration is not, per se, a precancerous lesion. Shotlander, in his monograph on "Cancer of the Uterus," makes the statement that he has never been able to demonstrate the origin of cancer at the seat of a laceration uncomplicated by eversion of the cervical lips or erosions. But on the other hand, he has invariably found evidences of inflammatory changes in his studies of cancer sections taken from the cervix. Erosions and eversion of the cervix are commonly associated with lacerations and in both these lesions we have presented to the acid secretions of the vagina the delicate mucous membrane of the cervix. This brings us again to the long established relationship of persistent irritation as a cause of cancer.

In the normal virgin cervix we find multiple layers of stratified squamous epithelium covering the entire vaginal portion of the cervix, beginning at the external os and continuous with the vaginal mucosa. Within the cervical canal is but a single layer of columnar epithelium with widely branching glands embedded in a firm texture of connective tissue, muscle fibre and elastic tissue. Rarely does the cervix escape injury in childbearing and when any considerable laceration results the mucosa of the cervical canal is exposed to the irritating influences of the vaginal secretions. These tissues readily become infected, there is a loss of the squamous epithelium round about the external os and over this denuded surface columnar epithelium spreads. New glands develop from this eroded surface and penetrate the underlying structures and we then have what Ruge and Veit called an erosion of the cervix. It is out of such structural changes that cancer arises and if we are to do our utmost in the control of cancer of the cervix, a disease that causes one death in twenty-four in women over 40 years of age, we are first to exercise the well known principals in obstetric practice that will reduce to a minimum infections and lacerations and we are to repair all lacerations of the cervix at a time certainly not exceeding six months after the injury is sustained. When seen late, as they commonly are, they are to be looked upon as potential cancers and, therefore, a condition of sufficient importance to require relief. It is not too much to say that if all lacerations, eversions and erosions of the cervix were properly treated prior to 40 years of age, the number of cancers of the cervix would be enormously reduced.

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*Abstract of a talk given before the Nebraska State Medical Association, Lincoln, May 10, 1921.

And by treatment I refer to surgical interference—not topical applications which at best may be referred to as trifling.

Cancer of the cervix occurs ten times as frequently as does cancer of the body of the uterus and unlike cancer of the cervix we find cancer occurring in the body of the uterus in the majority of cases in women who have never born a child. This is accounted for on the theory that the cause of the sterility in these cases rests in certain anatomical changes in the body of the uterus which may be included in the category of precancerous lesions. These lesions necessarily reside in the endometrium and we find hyperplasia of the mucosa, commonly referred to as endometritis to be undoubtedly a transitional change from the normal to the malignant. No one who has observed these structural alterations in the mucosa can fail to be impressed with the conviction that the glands of the endometrium can pass from the normal to the so-called inflammatory stage and from the inflammatory stage to the malignant. The proliferation of these glands, their great increase in size and number, their close proximity one to another, their great irregularity in shape and finally the proliferation of the epithelial lining of these glands all speak for the transition of the benign to the malignant. I regret that it is not possible to illustrate these points by the slides presented in the symposium, some of which showed very clearly the borderline between the inflammatory and the malignant. In one section was shown a perfectly normal gland, a hyperplastic (benign) gland and a frankly malignant gland.

Hyperplasia of the endometrium is nearly always associated with menorrhagia. Rarely does it exist without symptoms. All such cases should be curetted and the scrapings examined microscopically. In a few cases symptoms recur at a later period and demand the repetition of curettage. Where repeated curettements are required and the scrapings show a marked proliferation of the glandular elements hysterectomy is justified to forestall the possible development of cancer. These changes in the endometrium are commonly associated with fibroids of the uterus, hence the logical conclusion that fibroids predispose to the development of cancer. The hyperplastic changes in the endometrium in conjunction with fibroids of the body of the uterus form the connecting link between the normal endometrium and cancer.

DISCUSSION.

Dr. J. M. Patton, Omaha: I want to impress one thing about Dr. Tyler's pictures. You noticed how many growths there were about the eye and lips. Two of them involved the structures of the eye. Your patients may not worry very much about the growth itself, but they worry about losing their sight.

Occasionally you will find little things Dr. Tyler did not show in his picture—the small cancers that appear at the juncture of the cornea and sclera. If you notice a small greyish lump at the corneal margin, it should make you think if the presence of a beginning cancer of a type which is not only malignant, but destroys the vision without the possibility of restoring it.

Dr. D. T. Quigley, Omaha: The most malignant form of cancer we have to deal with as medical men has not been mentioned in this symposium at all. It is melano-carcinoma. I mention it here in order that this thing will not escape this meeting.

This most malignant form of cancer, is that which has been commonly called, largely without basis, melano sarcoma. Those who have made a pathological study of this know that is a misnomer. But whatever they are called, they are exceedingly malignant. They exist at a place where they can be seen. Most of them are in the skin or on the eye where they may be discovered early. They are tremendously malignant in that they form metastases very early. They occur usually in pigmented moles or warts. Wherever normal pigment exists may be the source of these growths.

What are the things that might lead a layman to suspect one of these was becoming malignant—that would lead us to some action which would save the life of the patient whose life is threatened? I had this thing borne in on me strongly by a patient I had from Lincoln two years ago, with a mole behind her ear where the ear-ring had rubbed against it. She was at a small town giving a lecture, and the doctor discovered she had this mole and it was bleeding. He sent her to see me. The mole was about as big as a shoe button. This was in October, 1920. I was leaving for Chicago and would return in a week. She said she would be back, but she went to a quack who used paste. In January, the lump was as big as my fist. It has grown to that size in less than three months. In about six weeks after the second time I saw it, I did an autopsy on this woman. Within five months she had died, and her liver was almost entirely replaced with carcinomatous tissue, and other internal organs were infected.

When these moles do go bad, they are tremendously malignant.

What may we know about them that points toward malignancy? Everybody has them. They come to us from the time of the reptile stage of existence. They are cells the chameleon uses in changing his color. These rudimentary things exist on all of us and we cannot all go to the surgeon and have them removed. I do not think it would be wise to suggest such a thing. We have plenty of premonitory signs. There are four things pointing toward malignancy.

First, if the mole should start to grow. Growth is the basis of all malignancy. Breaking down of basement membrane is one of the late signs. If our mole grows, it is going ahead toward malignancy. If little daughter's moles grow like little freckles that come up around it, it is time to get after it.

If it shows scabbing or bleeding it is exceedingly dangerous, because these things spread by both the lymphatics and blood vessels, and it is time to get after it.

If it shows inflammatory signs—quick swelling up and quick reddening.

If we pay attention to these four things, we will save the lives of hundreds of people who die from this form of cancer.

Just a word in regard to cancers of the uterus: It is called cancer of the uterus, but it should not be, since 95 percent are cancer of the cervix, and it is cancer of the uterus and upper part of the vagina together. It is not entirely localized in the uterus. As such it must be handled. Cancer of the cervix develops as a result of lacerations of the cervix. Repair of the laceration at the time of delivery of the baby or later would prevent the development of the disease.

Dr. I. H. Dillon: I will give you the end results of these cases we have had reported during 1919 and 1920, the following deaths from cancer:

TYPE	1919	1920
Cancer of Buccal Cavity	29	43
Cancers of intestines and rectum	106	134
Cancer of female organs	90	105
Cancer of stomach and liver	394	460
Cancers of breast	61	53
Cancer of skin	6	10
Cancers of unspecified localities	161	172
Totals	847	978

The total number of deaths from all causes in 1919 was 11,651.

The total number of deaths from all causes in 1920 was 12,934.

That does not mean there is necessarily a great increase. It means that more nearly 100 percent have been reported. Unfortunately, in meetings of this kind, the men who should hear these discussions are not present. You could not pull them in with a team of mules! That is the unfortunate situation in connection with this and other discussions along these lines.

A disease that has caused one death out of every fourteen in the state of Nebraska is certainly worthy of the consideration of its medical profession and of its laity.

Dr. A. S. von Mansfelde: Dr Dierson, in one of his clinical lectures, made this statement: That in examining a number of women, he had found to his astonishment that most of the women who had been treated before by general practitioners for something that was wrong in the uterus or vagina, in those cases, seldom did he find a cancer. That is a statement that has run through the years in my ears as being one of the most significant statements that could possibly be made by any lecturer —that if a woman will go early to her physician and he is the right kind of man to find something wrong and attend to it and try to bring the woman back to normal condition, in those cases Dr. Dierson reports he hardly ever found a case of cancer had developed.

It is well to remember that. It is a very important thing. When a woman is suffering from something she thinks is not normal, it is best for her to see her physician. She will prevent cancer and a good deal of heartache.

RADIOTHERAPY IN CANCER.[*]

D. T. Quigley, M. D., Omaha, Neb.

The use of light energy in the treatment of neoplasms necessitates a knowledge not only of the chemistry and physics of the agent used but also a working knowledge of the pathology of the disease, the physiology of the organs involved, and as far as possible an intelligent conception of the etiological factors in the individual case.

As far as we know there is no one etiological factor in cancer. The etiology of cancer of the lip is probably very different from that of hypernephroma. The etiological factors in cancer of the stomach are probably very different from those of endothelioma of the pia. The reactions of the different histological structures are just as different and the reactions in the different pathological formations of neoplastic type vary to just as great an extent. The structures of the eye will stand a dose of radium rays that would totally destroy the mucous membrane of the urethra. The skin of the face will stand without injury a dose of radium rays that would cause irreparable damage in the middle ear. An insufficient dose for squamous carcinoma might absolutely kill out round cell sarcoma while Hodgkins disease or lymphosarcoma might respond very decidedly to a dose that would have absolutely no effect on scirrhus cancer of the breast.

The use of light energy then as a therapeutic measure deserves a place as a specialty in medicine and the bad results, the ghastly mistakes and the various forms of malpractice that come under our observation nearly every day as a result of the use by incompetent persons of rented radium or the unskillful use of radium by specialists in other branches who buy a little radium to use as a side line, should only be considered as bungling experiments made on the human animal in an unscientific way.

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[*] Read at the American College of Surgeons Meeting (Nebraska Section), Omaha, March 3, 1921.

In the use of light energy only two forms of light deserve to be mentioned, the X-ray and radium. The X-ray is cheap and the volume of rays are abundant but it is very easy to overdose the patient and cause X-ray cancer. Radium is expensive and the volume of rays relatively small but this can be overcome by longer exposures. With X-ray burns must be avoided, with radium if used intelligently a burn may be produced if necessary without bad results. According to Russ and Colwell the penetration from radium is about thirty-five times that of the strongest Coolidge tube. This enormous penetration, together with the relatively benign effect of the radium rays on normal tissue, makes radium the agent of choice in every case where ray therapy is indicated.

It has been found by actual microscopic examination of removed tissue in the Schauta clinic in Vienna and by Schmitz in Chicago that the neoplastic cells in cancer of the cervix were killed to a distance of an inch and a quarter from the radium tube. The cells for a considerable distance beyond this area were sickened and made incapable of regeneration or transplantation. In this connection the subject becomes one of great importance to the surgeon who operates on cancer in any form. The main question with the surgeon is not the immediate operation but the likelihood of recurrence.

Cancer travels from one part of the body to another in only one way; by a process of transplantation. It cannot be transplanted in another animal but the tissues and blood of the animal that bears the cancer are a good field for that particular growth so that it may be transplanted anywhere in the body of the host. The process of setting up secondary cancer foci is quickened by any kind of traumatism applied to the primary seat of the disease. The force applied probably pumps lymph, bearing in suspension, large numbers of cancer cells to a considerable distance from the primary area. As an illustration of such trauma we might mention the clamping of forceps on the diseased area in operating for cancer of the lip, the rough handling of the breast or the use of considerable force in removing malignant glands from the axilla, or the clamping of instruments or the pulling, pushing, twisting and manhandling of the diseased uterus in hysterectomy for cancer of that organ. The traumatism incident to examination if done in a rough or careless manner may be enough, I believe, to put a patient from the curable into the incurable class. Add to the factor of traumatism that of direct transplantation. Instruments or hands become contaminated with cancer cells and these are planted back into the wound. I have seen a surgeon in one of the leading surgical centers remove a cancerous breast, take it in his hand, split it open with a scalpel, finger it carefully in order to observe all its gross characteristics, then finish the operation with the contaminated gloves and instruments. Such technique can lead only to recurrence. Observations of recurrence in cancer of the uterus over a seven year period have shown the recurrence in the anterior wall of the vagina in cases where retroversion existed and recurrence in the posterior wall of the vagina in cases where the uterus lay in anteversion. The recurrence takes place where the diseased cervix lay against the vaginal wall. We have all seen stitch cancer following breast operations and I have also seen the recurrence develop at a distance from the seat of operation where a drainage tube was pulled out through a slit in the skin.

The main cause of recurrence after operations for cancer is not then that the surgeon has not gone wide enough with his operation but that the cancer cells have been spread by traumatism before or during the operation, or the cancer cells have been planted back into the wound at the operation.

The logical place for radium is not after but before the operation. On any mucous surface such as the mouth or vagina where the moisture present must contain large numbers of malignant epithelial cells the radium will absolutely sterilize the surface of such cells and the danger of recurrence from transplants will be reduced to a minimum. The radium will also seal off lymph channels so that the traumatism incident to operation will be less likely to be a factor in producing conditions that may lead to recurrence. In breast cases the axilla and the primary area should be thoroughly rayed preceding operation to kill off the more active cells which grow at the periphery of the neoplasm and to seal off all possible lymph channels. The same principles apply to sarcoma or any other tumors which are malignant or in which there is any possibility of the development of malignancy, e. g. adenoma in any locations or fibroid of the uterus.

Radium alone is the method of choice in all superficial malignant conditions where the depth is not more than a few millimeters and glands are not involved. This includes lesions of the skin, face, lip, eyelids, mouth, tongue, middle ear and throat, cervix, rectum, penis hands and nipple. It is also the agent of choice in surgically inaccessable places such as the larynx and nasal cavities. Where the bulk of the mass is too great to be successfully rayed through, a preliminary raying followed by a very gentle and careful operation should be done. This class will include cancer of the breast, of the thyroid, uterus, sigmoid, adenoma and fibroid and sarcoma. Radium is recognized as an agent that will often make an inoperable case of cancer operable. I should like to emphasize the point that it should also be used to make the operable case operable.

X-RAY, RADIUM AND SURGERY IN THE TREATMENT OF CANCER.*

R. L. Smith, M. D., Lincoln, Neb.

The treatment of cancer has been as elusive as a mirage.

Always something of promise but when realized is usually quickly discarded for a more promising illusion.

In looking back over the records of the past fads and fancies, you will find the therapeutic history of the disease very interesting.

Such a diversity of opinion has existed that it would require a large volume to catalogue briefly the various theories as to etiology and treatment.

Cancer has been attributed to the three humors of Hippocrates and Galen also to every individual tissue in the body. The mysticism of the past has also been called upon to account for the disease. Even the witch doctor combined the secret of black art with the brewing of witch broth.

Ointments of green frogs, the liver of a tortoise laid on the cancer, paste of crow's feet, dog fennel, sulphur and arsenic were popular in the 18th century.

The medical treatment in other words has included hundreds of mineral, vegetable, physical and animal products.

As far back as 2000 B. C. in the writings of ancient India, definite directions for the surgical removal of cancerous growths can be found.

Radical excision has been advocated and practiced for centuries.

Regardless of all the years of experience and accumulated knowledge over one hundred thousand of our population die annually.

Two methods of treatment have stood the test of time and seem to offer something for the future, surgery and radioactive substances.

Surgery unquestionably offers the most promising results if the diagnosis is sufficiently early to permit a complete removal. Yet it is as useless as a poultice of green frogs legs if the tumor cannot be removed completely.

Too often the patient consults the surgeon with an inoperable cancer. The surgeon realizing the patient cannot survive tries to remove an irremovable mass. The unfortunate dies and surgery has one more fatality or failure to explain, all of which discourages the neighbor who may have an operable lesion.

Surgeons in the past have accepted for operation malignant cases that were so far advanced that there was not the slightest chance for a cure.

Unquestionably every malignancy that can be removed is a pure surgical lesion. Those that cannot be removed completely are nonsurgical.

Proper Roentgen therapy offers so much more in the way of palliation than surgery that it seems good judgment to delay or omit entirely surgery on inoperable lesions.

Surgery on inoperable cancers promotes the rapidity of metastasis and practically places the patient in the incurable group.

Surgeons and radiotherapeutists have cured superficial cancers for a number of years. One method probably as successful as the other with this exception—fewer recurrences in those cases treated by X-ray and radium, no scarring or deformity following the treatment.

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*Read before the Nebraska State Medical Association, Lincoln, May 11, 1921.

The chief difficulty has been with deep-seated malignancies that do not cause the patient symptoms until the disease is advanced. It follows, therefore, that early diagnosis is the most important single factor and all efforts should be to that end.

While we are correcting our diagnostic errors we must accept conditions as we find them and treat the patient accordingly.

Both surgery and X-ray have failed to reduce the mortality appreciably because of lack of proper cooperation.

For instance if a careful stereo Roentgen examination of the chest is made on every cancer of the breast before operation many operations would be abandoned.

Roentgenology offers much more to these patients as a palliative measure than surgery and many times will reduce the inoperable to an operable lesion.

I wish to illustrate by citing two cases:

First—A male fifty years of age who was apparently suffering from hemorrhoids, operated upon for hemorrhoids but continued difficulty was experienced together with loss of weight, appearance of a tumor in the rectum, cachexia and in fact everything that goes with a fairly advanced carcinoma.

The patient was advised to accept Roentgen therapy as a palliative procedure and I proceeded to treat him with massive doses of X-ray through a number of portals. His cachexia disappeared, the symptoms such as pain, discomfort, etc., disappeared and he regained about 30 pounds which practically brought him up to normal weight. An examination at this time showed no evidence of the tumor and only a slight induration of the wall at the site of his previous lesion. The patient felt that he was cured.

The physicians in charge of the case admitted they had been mistaken.

The patient refused additional treatment and six months later returned with a recurrence from which he died.

I feel positive that a Kraske operation would have prolonged his life probably to the normal limit if performed following the Roentgen treatment when no evidence of the tumor existed.

Second—A female about fifty years old presented herself to me. She had an inoperable carcinoma of the right breast. The tumor was as large as a small orange. She had retraction of the skin and palpable glands in the axilla.

She received massive doses of X-ray for a number of months, the tumor disappeared entirely, the induration in the axilla also disappeared and she remained apparently well for two years, when the tumor began to show signs of activity.

A circular amputation of the breast was done leaving the wound open for additional Roentgen treatment. The wound healed completely in about three months and to date about four years since treatment was started the patient remains well and free from any apparent metastasis.

These cases and many similar ones have taught me that all cancers are not incurable nor are they necessarily surgical at all times.

Basing my conclusions on 350 case records of postoperative and inoperable cases of all types treated with X-ray during the past three years it is my opinion that all advanced cases of malignancy should be treated by massive doses of X-ray through filters sufficiently dense to protect the skin with not less than ten inch spark gap continued sufficiently long to deliver a destructive dose to a cancer cell; that the success of X-ray depends primarily on proper filtration of the X-ray and results will improve as voltage or penetration is increased provided treatment is continued long enough to deliver a lethal dose to a cancer cell deep in the body tissue. Any treatment short of this places the Roentgenologist in the same position as the surgeon who operates on an inoperable cancer.

DISCUSSION.

Dr. E. W. Rowe, Lincoln: As I listened to this paper, the thought occurred to me this was a very conservative paper. I think Dr. Smith should be congratulated because he is not over enthusiastic, which often leads to error, and injury to the patient. Dr. Smith has given us a cool, concise, careful statement of the facts up to date. The paper is not long. He has not spent much upon theory, but has given the results of his clinical experience.

The question naturally arises: What has the X-ray done? If you think about the program yesterday morning and divide the field into four parts—tumors of the breast, gastrointestinal tract, superficial tumors, and cancers of the uterus—you will find in some of the fields the prospects are much brighter than in others. When you think of what has been accomplished, you must think back to conditions ten to fifteen years ago.

The darkest field in therapy, I think, is the gastrointestinal tract. Yet, due to the efficiency of the X-ray in diagnosis, it is becoming a more hopeful field. There are a few cases of cancer of the stomach which begin so early and advance so rapidly it is impossible by any means to diagnose them. But those who have been watching the reports on surgery of the stomach know that there are some cures being effected by surgery. That has been due largely to the fact that the X-ray has made the diagnosis early and more exact. In the remainder of the gastrointestinal tract, very little progress has been made.

In the pelvis there has been more progress. From most of the larger clinics, I think you will find they no longer feel a carcinoma of the cervix is a surgical case—that it is a case for radium or Roentgen therapy. This is the experience that is coming out of Clark's clinic and from others in our own country. It is because of the efficiency of radiant energy in the treatment of these cases.

The most hopeful field of all has been in the treatment of superficial lesions, yet fifteen to twenty years ago the mortality was high in that field when they were using only caustic paste, etc. There are some men reporting 100 per cent cures of these cancers, yet if you take the conservative clinics like Johns Hopkins, you will find selected cases are running 93 per cent, and the unselected, 85 per cent.

I wish to say I think there is something in Roentgen therapy. Looking back, we can see a distinct progress.

Dr. W. S. Evans, Columbus: There is more or less difference of opinion as to what the massive dose is.

Dr. Robt. McConaughy, York: One case he reported to be about the size of an orange, and inoperable. Why? I have understood it might be removed unless in the ulcerated stage.

I want to ask if it had been operated upon and X-rayed, whether it would not have stopped, instead of having it return, and then operating and using the X-ray? It is for information.

Dr. Sanford R. Gifford, Omaha: We find the postoperative use to be one of the most valuable things about it.

After removing an eye for glioma, one of the malignant tumors of the eye, if we find the tumor has extended beyond where we have been able to cut the nerve, we always advise radium treatment afterwards, and have apparently been able to save two or three cases within the last two years where otherwise the prognosis would have been fatal.

In other malignant tumors when there is evidence of extension, treatment by X-ray and radium should be very valuable.

I should like to ask Dr. Smith what he can tell us about the relative value of X-ray and radium treatment in such cases.

Dr. Roscoe L. Smith—Closing: In reply to the question as to the massive dose of Roentgen ray. It depends entirely on the depth of the tumor, the amount of milliamperes and the type and density of filters. There are many different materials used in filtering X-ray, but the most common in the past has been aluminum. It has been proven lately, however, that copper is a much more desirable filter for X-ray when the effect is desired deep in the body tissue. Copper has ten times the absorption value of aluminum. Therefore, it is not necessary to use such a thick copper filter as would be required if aluminum was used. One-half millimeter of copper is equal in absorption value to ten millimeters of aluminum. Copper is more desirable, for the reason that ten millimeters of aluminum would produce so many secondary and deflected rays, the skin would receive an erythemia dose from these secondaries much sooner than through copper. It is necessary when using copper as a filter that the voltage be increased considerably.

When using copper and high voltage in Roentgen treatment, it is best to increase the focal distance for the reason that increased focal distance increases the depth dose, at the same time decreasing the skin dose. If one desires a massive dose, for instance in the uterus of the ordinary patient, it could be given as follows: Focal distance 14 inches, circular area to be treated 8 or 9 inches in diameter, one-half millimeter of copper, 110,000 volts, 4 milliamperes current applied from forty to sixty minutes. It is necessary for any Roentgenologist attempting such massive doses to standardize his own apparatus and prove out his erythemia dose gradually before such technique as given above, is adopted, for use on a patient. In the past, we have been dividing our depth dose into a number of separate treatments. From recent work and present conditions, many are of the opinion that the entire dose should be given at one time. I cannot quite accept that technique and am of the opinion that the patients stand the treatment much better if it is divided at least in two different doses.

Concerning the question brought up about the patient who had an inoperable carcinoma: I believe that in any tumor of the breast, when metastasis has extended outside of the breast itself, it is an irremovable cancer. When there are glands involved in the axilla, there surely are glands involved in other places. You can remove the breast and most of the glands including the supraclavicular which are the earliest affected and the most difficult to remove, but even the most radical operation at this stage is almost certain to fail to remove all of the affected tissue. The sufferer is no better off than before the operation and any surgical attack that does not remove all of the affected tissue, in my opinion, is poor surgical judgment. If the surgeon can remove the tumor before extension has taken place, it is unquestionably a surgical lesion and by all means should be recognized as such. A Roentgenologist who treats an operable cancer with the exception of epitheliomas, is certainly using poor judgment and abusing his method of treatment, besides doing a rank injustice to the patient.

As to the relative value of X-ray and radium. Radium has a value in superficial lesions and in lesions where it is possible to plant the radium in direct contact to the tumor. I think of radium as a physician friend of mine said yesterday, "It is like a cautery iron and penetrates about the same distance." I much prefer the present day X-ray as we have come to use it. With the apparatus I am using, I have a capacity of 120,000 volts and a Roentgen tube with a capacity of 150,000 volts. This type apparatus is in general use by men doing therapy and I feel convinced that the results are more desirable than the results obtained from radium.

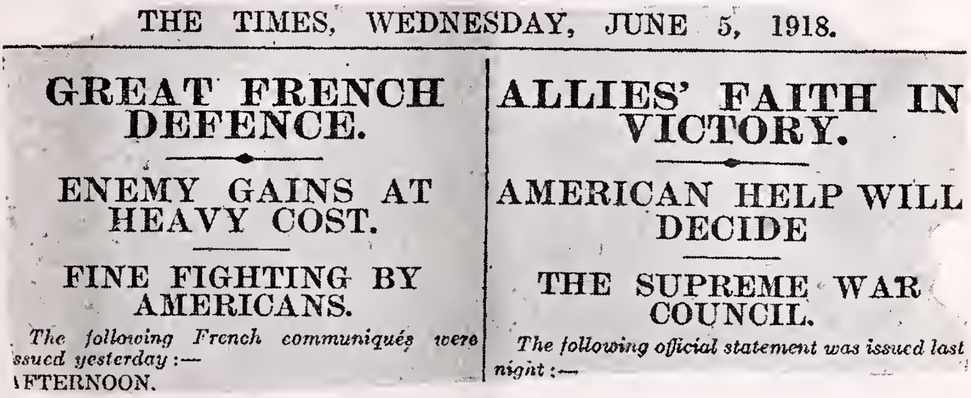
We have an apparatus promised, and we expect it to be available in the near future, which will deliver 250,000 volts. With this type apparatus our results in malignancies will unquestionably surpass anything that has ever been done with radium. For a good many years I have fought for massive doses. When this high voltage apparatus is available it will be possible to filter it through three millimeters of copper; increase the focal distance and increase our dose in proportion and will allow a lethal dose to be delivered deep in the body tissue and at the same time relieve the Roentgenologist of the possibility of superficial burns. This unquestionably will result in some real cures in cancers, not only of the superficial but of the deeper lesions as well. Incidentally we should be in a position to do some valuable work in gastrointestinal and uterine malignancies. The method is not without some risk since it is up to the Roentgenologist to cure the malignancy or let the malignancy kill the patient.

A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Nebraska. Formerly Lt. Col., M. C., U. S. Army.

CHAPTER V.

One of the most interesting and pleasant surprises of my stay in Great Britain was the celebration, even under war conditions, of the Christmas holidays. I found that at all times the Britisher has an extraordinary capacity for laying aside business and other cares when a proper rest time arrives. This applies to afternoon tea, week ends, bank holidays and all other similar occasions. At Christmas time in 1917, war conditions had still not become so bad but that we were able to really enjoy the elaborate provisions that were made for the season. A great deal of food had apparently been stored away for Christmas. We had been strictly economical up to that time but in the Welsh Metropolitan War Hospital and among the British friends who had been so kind to us at other times there was sufficient food for sev-


THE TIMES, WEDNESDAY, JUNE 5, 1918.

GREAT FRENCH DEFENCE.

ENEMY GAINS AT HEAVY COST.

FINE FIGHTING BY AMERICANS.

The following French communiqués were issued yesterday:—

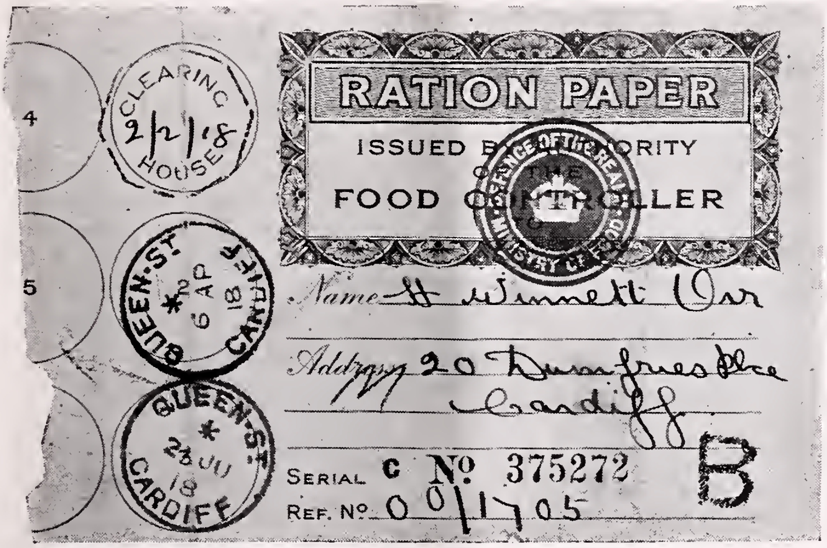
AFTERNOON.

ALLIES' FAITH IN VICTORY.

AMERICAN HELP WILL DECIDE

THE SUPREME WAR COUNCIL.

The following official statement was issued last night:—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CLEARING HOUSE 2/2/18

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QUEEN-ST CARDIFF 6 AP 18

QUEEN-ST CARDIFF 23 JU 18

RATION PAPER

ISSUED BY AUTHORITY OF THE FOOD CONTROLLER

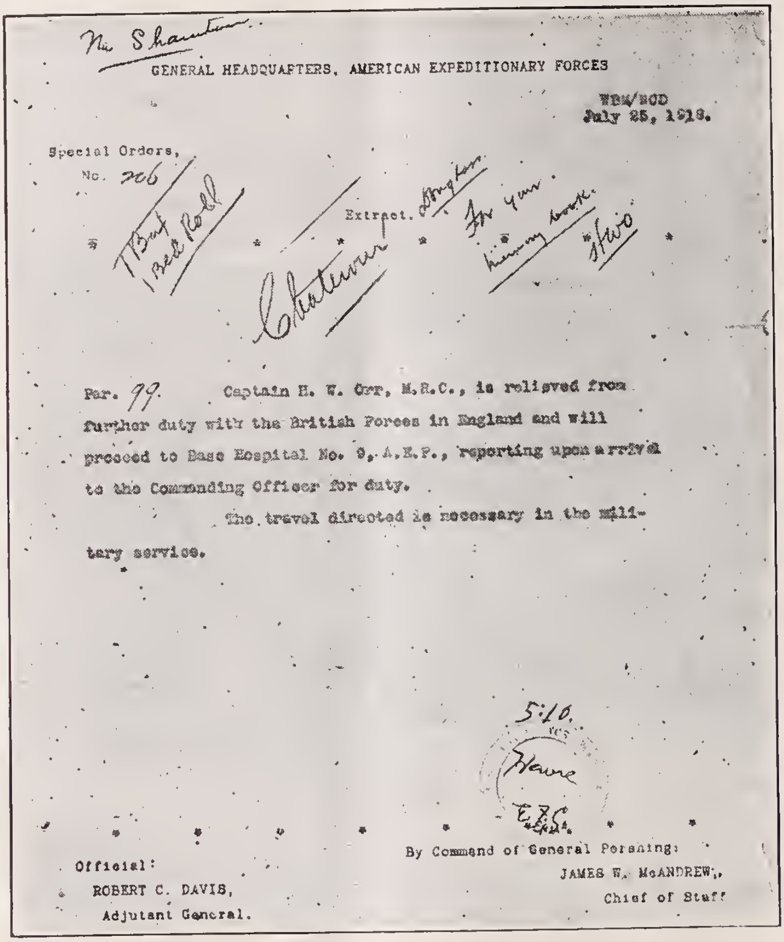
Name H Winnett Orr

Address 20 Dumfries Place Cardiff

Serial C № 375272 B

Ref. No 00/1705

eral very excellent Christmas dinners. We had these at various times from Christmas up to New Year's Day. Major Alwyn Smith, Mr. Bayumi, Mr. H. Spence Thomas and the Lord High Sheriff Mr. Radcliffe, all acted as hosts to the Americans who were on duty in Cardiff at that time. The nurses, officers and men in the hospital all entered very thoroughly into the spirit of Christmas. Singing troupes were organized and several concerts were given in the Hall at the hospital, the wards were all gaily decorated, and at the Officers ward (M5A) two dances were given to which the American officers were invited. To me at least the entire holiday season was a succession of pleasant surprises and a conclusive demonstration as to the strength of the British spirit, even after three years of war.



GENERAL HEADQUARTERS, AMERICAN EXPEDITIONARY FORCES

WBM/BCD
July 25, 1918.

Special Orders,
No. 206

Bed Roll

Extract.

* * * * *

For your history book.
H.W.O.

Par. 99. Captain H. W. Orr, M.R.C., is relieved from further duty with the British Forces in England and will proceed to Base Hospital No. 9, A.E.F., reporting upon arrival to the Commanding Officer for duty.

The travel directed is necessary in the military service.

5:10.

Havre

* * * * * * * * *

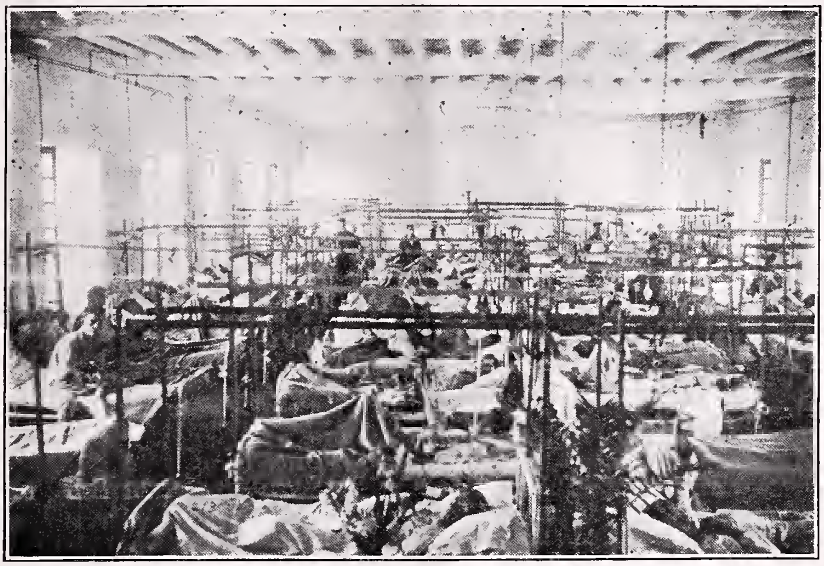
By Command of General Pershing:
JAMES W. McANDREW,
Chief of Staff

Official:
ROBERT C. DAVIS,
Adjutant General.

The end of 1917, however, was marked by a good deal more than the celebration of Christmas. The British War Office and the Ministry of Pensions had just become aroused on certain questions which were of great importance.

The shadow of the coming spring offensive on the western front was already spreading over the country. The British hospitals of all kinds, permanent and emergency were filled even in the comparatively quiet times about the holidays. Many sick and wounded were arriving in the British Isles daily. This situation led to an investigation which revealed the fact that patients were being detained in hospitals longer than necessary. This was the result both of failure to provide prompt treatment upon arrival at hospital and efficient treatment afterwards. The important question of methods of shortening the period of disability arose. It was soon found that a considerable number of cases could be returned to usefulness much more promptly by transfer from general to orthopedic hospitals. This was true particularly of those patients who had been months in the hospital with drop foot, contraction of the hip or knee or some other disabling deformity that could be corrected surgically or by mechanical apparatus. There was a considerable increase in the activity of the orthopedic centers after this time.

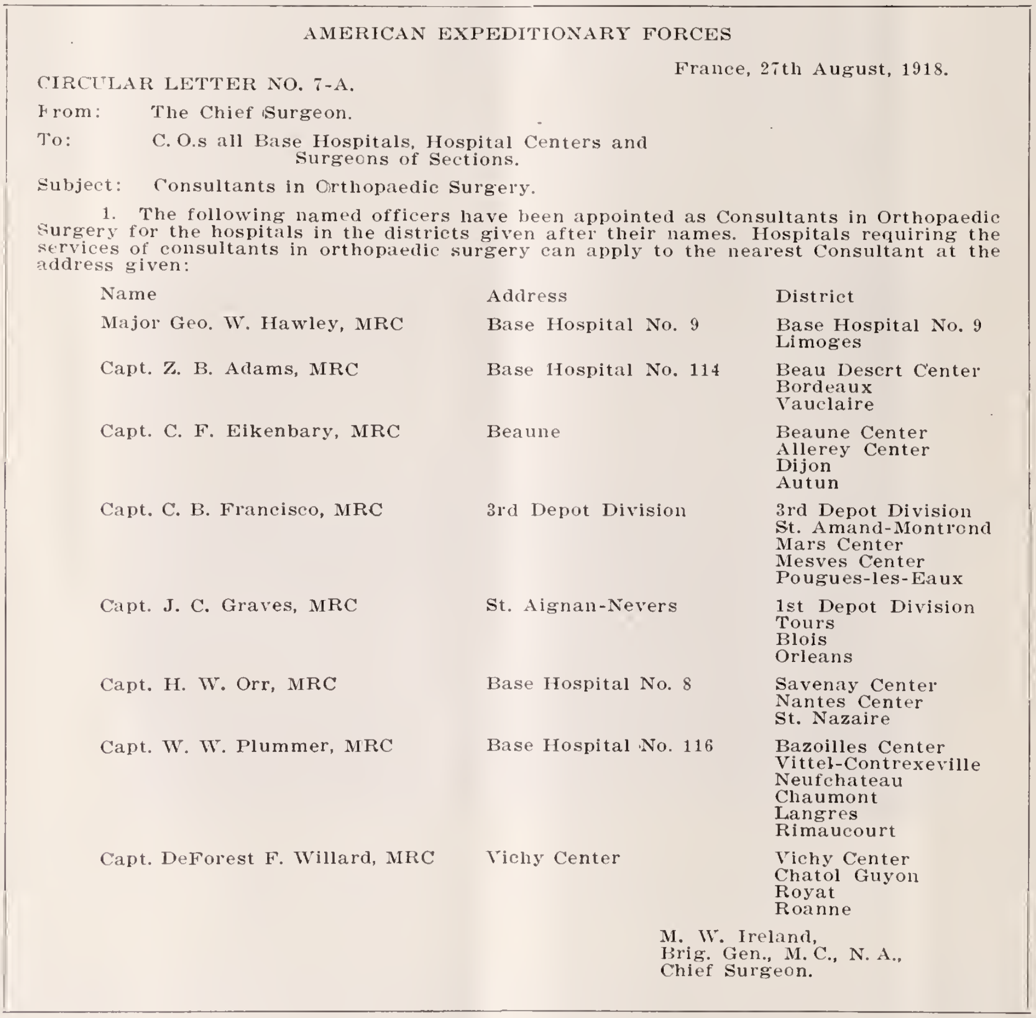
It was also found that many men were delayed in hospitals because of failure to systematically re-examine patients; consequently they were not promptly discharged when ready. It is not commonly appreciated how much unnecessary disability there is because of failure to inspect frequently patients of this class. Very often the removal of a sequestrum, the correction of a contracted knee, the splinting of a drop foot is all that is necessary to return to duty in a few weeks a patient who otherwise would be lying in a hospital or sitting around home for months. This was one of the points that was brought out by the visits and inspections of the A. D. M. S. (assistant directors of medical services), who began making their tours of British hospitals during the winter of 1917 and 1918. These inspectors came with authority to examine particularly every patient who had been in the hospital more than sixty days. They were to discharge all such patients at their discretion. As a result of this weeding out process many beds were vacated, which had been occupied for months, and hospital preparation was begun for the tremendous rush which we were shortly to be called upon to take care of.



Miscellaneous fracture ward in Base Hospital No. 27 at Angers. The overhead frames are the Balkan frames which were used for suspension and extension in fracture cases.

At about this time also the hospitals were called upon by the Ministry of Pensions to furnish more satisfactory written reports regarding our patients. It was found that the patient's record side of many hospitals had been very seriously neglected. Fortunately for us, our card index system which had been in operation for nearly six months supplied us promptly with most of the information which was called for. However, the increased "paper work," as it was called, was a serious burden to the medical staff and it was only by the loyalty and industry of some of the patients themselves who acted as clerks that much of what was required could be supplied.

An important step taken by the British War Office during the winter of 1917 and 1918 also was that which was taken with regard to the treatment of fractures of the femur. It was found that the results being obtained in the treatment of this condition were far from as good as they should have been. Great progress had been made in the three years of the war in the emergency treatment of these patients. It was a matter of record that during the first year of the war about 60 percent of all the men who sustained gunshot wound fracture of the femur died. With the inauguration of the emergency splinting of these patients on the battle field by the Thomas splint, there was an immediate marked improvement in this regard. By the third year of the war the death rate had been reduced from 60 to about 12 percent. Now, however, it was found that the ultimate results in these cases were not good enough. There was found to be a large amount of shortening and deformity in the femur and leg cases. This was said to be due largely if not entirely to failure to maintain continuity of treatment as good as the first splinting. Somewhere between the advanced dressing station, and the base hospital the treatment broke down and the patients were recovering with serious deformity and consequent permanent disability. It was at first supposed that this was the result of the transportation of these patients from France to the British Isles. We were told that an attempt would be made to treat all femur cases in France until union with good length and position had been obtained. Later, however, we understood that this had been found to be impracticable and the patients were brought as before to the Base Hospitals in Great Britain for treatment. There was, however, as a result of the "shaking up" an immediate improvement in the treatment of these cases. And there was a corresponding improvement in the character of results. The principal factors in this change were the more general efficient use of the Thomas splint, the employment of traction by ice tongs and certain other measures that came to be insisted upon in the orthopedic and other hospitals.


AMERICAN EXPEDITIONARY FORCES

France, 27th August, 1918.

CIRCULAR LETTER NO. 7-A.

From: The Chief Surgeon.

To: C. O.s all Base Hospitals, Hospital Centers and Surgeons of Sections.

Subject: Consultants in Orthopaedic Surgery.

1. The following named officers have been appointed as Consultants in Orthopaedic Surgery for the hospitals in the districts given after their names. Hospitals requiring the services of consultants in orthopaedic surgery can apply to the nearest Consultant at the address given:

Name	Address	District
Major Geo. W. Hawley, MRC	Base Hospital No. 9	Base Hospital No. 9 Limoges
Capt. Z. B. Adams, MRC	Base Hospital No. 114	Beau Desert Center Bordeaux Vauclaire
Capt. C. F. Eikenbary, MRC	Beaune	Beaune Center Allerey Center Dijon Autun
Capt. C. B. Francisco, MRC	3rd Depot Division	3rd Depot Division St. Amand-Montrond Mars Center Mesves Center Pougues-les-Eaux
Capt. J. C. Graves, MRC	St. Aignan-Nevers	1st Depot Division Tours Blois Orleans
Capt. H. W. Orr, MRC	Base Hospital No. 8	Savenay Center Nantes Center St. Nazaire
Capt. W. W. Plummer, MRC	Base Hospital No. 116	Bazoilles Center Vittel-Contrexeville Neufchateau Chaumont Langres Rimaucourt
Capt. DeForest F. Willard, MRC	Vichy Center	Vichy Center Chatol Guyon Royat Roanne

M. W. Ireland,
Brig. Gen., M. C., N. A.,
Chief Surgeon.

The various reforms above referred to

France, March 3, 1918.

Circular No. 11.

The following instructions are issued for the guidance of all Medical Officers:—

1. Injuries to the bones and joints, as well as of the muscles and tendons adjacent to these structures, represent a large percentage of the casualties of both the Training and the Combat Periods of an Army.

2. To restore useful function to these injured structures is one of the purposes of the Medical Organization of the Army. The problems involved in this have to do not only with the cleansing and healing of the wounds, but also with the restoration of motion in the joint or strength to the part. This latter part naturally follows the first, but it is essential that the first part be carried out with reference to that which is to follow. Unless this second part of the treatment, the restoration of strength and motion, is carried out, much of the first part is purposeless.

3. To insure to the man not only the proper treatment for this type of injury, but the proper supervision until he is as fully restored as possible, necessitates some form of radical control that makes it impossible for a man to be overlooked in inevitable transfers, from service to service, or hospital to hospital.

4. Since so much of the ultimate result in these conditions depends upon orthopaedic measures after the first treatment of the wounds has been carried out, the following will govern:—

The Director of Orthopaedic Surgery is responsible for the treatment of the injuries or diseases of the bones or joints, exclusive of the head and face.

He will be held responsible for the treatment of injuries or diseases of the ligaments, tendons or muscles, that are involved in the joint function, of the extremities.

Officers attached to other Divisions may operate upon and treat such conditions, but the Division of Orthopaedic Surgery, through its Director, will be held responsible for the character of the treatment and for the final results.

It is expected that the direction and supervision of the treatment here indicated will be carried out, in so far as is possible, in co-operation with the Director of the Division of General Surgery.

5. To carry out the instructions of this circular, the Director of the Division of Orthopaedic Surgery will arrange so that representatives of his Division will see all cases of the nature described, to determine whether or not their management is proceeding satisfactorily so as to obtain the best possible results. These representatives will report to the Commanding Officers of the hospitals in which such patients are being treated and their services as consultants will be freely utilized: any recommendation made by them as to change of treatment, transfer to some other professional service, or hospital will ordinarily, if the military situation permits, receive favorable consideration.

6. It is not the intention of this order to interfere with the routine work of hospitals, but to insure to the soldier proper supervision during the time of his treatment and the period of his convalescence.

By Command of General Pershing:
APPROVED:
J. G. Harbord,
Chief of Staff.

A. E. Bradley,
Brig. Gen., N. A.,
Chief Surgeon.

came at a good time. The spring offensive on the Western Front instead of being started by the British was started by the Germans. The British sustained some very serious punishment. From February until May the British wounded were brought across the channel in thousands. With all the measures at our disposal for vacating beds, keeping up our records and operating upon and splinting our patients, we were still hardly able to meet the tremendous surgical and hospital problems that were presented during those months. Even during those dark days, however, the hopes of many of us were kept up to a large extent by the news of rapidly arriving American reinforcements. Just when things were getting to their worst the Americans entered the fray and by their inspiring early victories gave us fresh courage and a definite hope that the new forces from America would be able to turn the tide against Germany.

(To Be Continued).

LEGAL LIABILITY FOR TRANSMITTING INFECTION.

Personal responsibility for the transmission of venereal disease has now been upheld in several different phases by both civil and criminal courts, says the U. S. Public Health Service. In Oklahoma a man has been sentenced to five years in the penitentiary for infecting a girl with syphilis. In Nebraska the court upheld a doctor who warned a hotel keeper that one of his patients, a guest at the hotel, had syphilis and had refused treatment and was consequently a menace to the public health. In North Carolina a woman has been awarded $10,000 damages against her husband for a similar infection and the supreme court has upheld the judgment.

The Nebraska case is important because it asserts that a physician's duty to protect the public health may, under certain circumstances, transcend his duty to hold his patient's confidence inviolable. The North Carolina case is also important because it sets aside in this particular case the legal barrier that prevents a wife from testifying against her husband and bringing suit against him.

All three cases are valuable in counteracting incorrect statements, often made, that the venereal disease law falls almost exclusively on women and lets men go free. State laws of course govern in all such cases but the fact that every state in the union has now adopted many if not all of the venereal disease laws, gives ground for expecting similar action in other states. Certainly the wide dissemination of the three decisions should go far to curb diseased persons who deliberately expose others to infection.

The fact that the North Carolina decision makes it likely that marriage will henceforth be no adequate defence against a suit for transmitting infection will probably hasten the adoption by the states of laws requiring every applicant for a marriage license to present a certificate by a reputable doctor certifying that he is free from venereal disease and providing that without this no license shall be issued.

Twenty states have already adopted laws forbidding persons with venereal disease to marry, seven of these: New Hampshire, New Jersey, North Carolina, Oregon, Washington and West Virginia—having acted during the present year's sessions. A similar bill is now pending in Florida.

All of the twenty states do not require medical examination and certification that the applicant is free from venereal disease. "Such a certificate should be required in every state," insists the Public Health Service. "Any decent man with an uncured infection who marries does so either because he does not realize the seriousness of his action or because he believed that he is cured. The necessity for an examination should bring its seriousness home to him and should be welcomed by him as a protection for his wife and children. No real man should object to a medical examination required by law.

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CANCER WEEK.

The American Society for the Control of Cancer has inaugurated a "Cancer Week" beginning October 30 and ending November 5 of this year. It is proposed that a nationwide campaign be carried on throughout the week. It will be a campaign of education directed primarily to the public but it is also deemed advisable that all medical organizations throughout the country hold scientific meetings for the presentation of the cancer problem. Dr. Donald C. Balfour of Denver, Regional Director of the Rocky Mountain District, suggests the following program for these meetings:

(a) Present day conceptions as to the cause of cancer.
(b) Recent progress in the study of cancer.
(c) Recent methods of dealing with cancer.
(d) What can reasonably be expected to be accomplished in the future.
(e) What progress is being made in shortening the interval between the first visit to the physician and radical treatment.

It is to the public, however, that the energies of the organization will be largely directed. All public meetings are to be conducted by local medical organizations. The State Chairman is instructed to appoint a local chairman in every local community of five thousand or more inhabitants. In the State of Nebraska, the organization will consist of an Executive Committee which will work directly through the Board of Councilors of the State Medical Association. The Councilors will appoint the local chairman in their respective districts.

The activities to be undertaken are outlined as follows:

(1) **Lectures** to be given by physicians, surgeons and nurses who are competent to speak with authority on the subject of cancer. A syllabus will be supplied by the national organization as a guide for the lecturer in presenting the subject. In addition, the national organization is prepared to furnish a series of lantern slides to illustrate the subject. These lectures are presented to medical societies, nursing organizations and the general public.

(2) **Literature** in the form of pamphlets containing facts which every one should know about cancer are supplied by the society for distribution in these meetings.

(3) **Publicity.** Articles are to appear in medical journals and in the lay press. These articles are to be carefully edited by editorial committees composed of medical and lay publicists.

The Department of Health, both state and local, are requested to take a leading part in directing the various activities of this campaign.

Much has already been accomplished by way of instructing the public in the cancer problem with the result that in many communities, patients now present themselves for diagnosis much earlier in the course of the disease than in the past. Medical men and medical organizations have an obligation resting upon them to give the public that wise counsel in matters of public health which will safeguard them against the ravages of disease. It is not enough for medical organizations to sit in council for their own enjoyment and instruction. They should reach out to the public which they serve and give to it such knowledge and instruction as they may to the end that the laymen may cooperate with the profession in the prevention and early recognition of disease. In the scourge of cancer we have a problem which presents many hopeful as well as distressing aspects. We are told that in the United States approximately 100,000 men and women die annually of cancer, that cancer is on the increase at the rate of about two and one-half percent a year and that seventy percent of all cancer cases could be cured if recognized in time and proper surgical treatment applied in the earliest stages. The American Society for the Control of Cancer is asking the cooperation of all men and women in the medical profession and all medical organizations, whether national, state or local, in bringing before the lay public such information on the subject of cancer as will acquaint them with the prevalence of the disease and of its earliest manifestations so that they will seek competent medical advice at the very onset of suspicious signs.

It has been argued that much harm will result from such propaganda by frightening the people. To minimize this, the Society proposes that the subject be brought before the public as a "message of hope"—not of despair; that the gruesome aspects of the subject be withheld. The public is to be told that cancer is not a constitutional disease, it is not a "blood disease", it is not hereditary and not contagious but rather is a local disease in the beginning and if operated upon early it can be wholly removed with the assurance of cure. They are told what cancer is; that it is a lawless growth of body cells which destroy life if left alone to run their course but by removing these outlaw cells in their earliest development a cure is assured. They are told that cancer begins as a sore in the mouth as the result of such irritating influences as pipe smoking and jagged roots of teeth; in the breast from cracks and fissures of the nipple and lumps in the breast; in the stomach from long standing ulcers which have produced persistent indigestion; in the gall-bladder from stone and in the womb as the result of injuries and infections sustained in childbearing. These and many such examples are presented to drive home the simple truth, and it is about all we know of the cause of cancer, that long continued irritation predisposes to the development of cancer. And that if we are to prevent cancer and to cope with it successfully, all such irritating influences must be eradicated.

The Journal of the State Medical Association of Nebraska bespeaks the hearty cooperation of the medical profession of our state in this campaign. Let every man and woman in the profession do his and her part in furthering the campaign. Not all can lecture or write for publication but all can and we trust will personally pass the "message of hope" along to their patients.

P. F.

PAPERS PRESENTED AT ANNUAL MEETING, PROPERTY OF ASSOCIATION.

Chapter III, Section 4, of the By-Laws: "All papers read before the Association shall be deposited with the secretary when read."

Without specifically saying so, this implies that the papers when read become the property of the association—they are a part of the proceedings—and original publication belongs to the Nebraska State Medical Journal.

The position of the Committee on Journal and Publication is very clearly defined. The policy of the Journal is against publishing clippings and reprints as original matter.

The members of the organized profession should realize that the Journal is theirs, that it is valuable, and that nowhere can greater honor come to them than by publishing papers in their own Journal.

ABSTRACTS FROM CURRENT LITERATURE.

Carcinoma On Stomach Ulcer.

Chas. H. Mayo, in a paper entitled "Carcinoma Developing on Gastric Ulcer," read at the recent annual session of the American Medical Association, discusses the subject in a thorough manner. He has with combined statistics and with a pathological study by MacCarty, corrected a previous impression that approximately three cancers of the stomach out of four have developed on an ulcer. The review of the statistics presented, gives the incidence of cancer developing on an ulcer as one in twelve to one in six, which he thinks should be considered too low. On account of the great variance in the operative procedures and in the classes of cases coming to examination at the various clinics there is considerable difficulty in collecting statistics and it is wisely thought best to drop the percentage basis.

"Clinical observations show that the previously traumatized epithelial areas are more susceptible than normal epithelial areas to the development of cancer: for example, cancer of the uterine cervix following laceration; cancer of the lip in areas of chronic irritation from a fissure or herpes; cancer of the tongue or cheek from a broken tooth as an irritant; the degeneration of scar tissue; cancer of the gallbladder which is associated with gall stones in more than 85% of the cases; and ulcer of the stomach in the large number of which with a diameter of 2 cm. or more, according to MacCarty and Broders, the margins are involved by carcinoma."

Concerning cancer in general it seems probable that there is sufficient data to show that several causes contribute to its development, and that irritation, erosion of epithelium and the character of fluids in which the parts are bathed, play the most important roles. The exact starting point of cancer of the stomach is unknown but the early carcinomas in this organ have been seen in the mucosa in the borders of chronic ulcers. Simple chronic gastric ulcers, however, in which there are no signs of cancer, are frequently found.

—G. P. P.

Deep Roentgenotherapy.

George E. Pfahler. Clinical results from the new technique of Deep Roentgenotherapy of malignant diseases. (American Journal of Roentgenology, May 1921).

From information brought over from Germany, a greater amount of filtration was being used in the treatment of deep-seated malignant disease with the source of the X-ray at a greater distance from the skin and with the use of higher voltage than in this country. Our equipment in America does not permit of an exact duplication of the German method, because we cannot get a high voltage with our present apparatus. Therefore the technique has been improved with our present apparatus to determine what results could be obtained that would correspond with those obtained in Germany. Ten millimeters of aluminum or glass was used for a filter with a skin distance of 30 cm. for a long period of time. This will rarely give an erythema. He adds a word of caution to be repeated at the end of the article. "It is most important in every instance before the current is turned on that the filters be counted to make sure they are in place, because if filtration is deficient, this prolonged treatment will produce an incurable burn. As a precaution against an accident, I require two people to make an observation of the filters for each dose given."

He recommends the use of glass instead of aluminum because the metal filters frequently lead to puncture of the Coolidge tubes. He quotes Professor Shearer that glass is not uniform in density, therefore it should be compared carefully with aluminum before being used.

Observation in the treatment of malignant disease has shown that a pronounced primary effect is obtained and disease will disappear in a few months; that a resistance develops which is greater than the surrounding tissues, therefore requires an amount of treatment necessary to destroy the malignant disease. Therefore it is desirable to get as much treatment into the malignant disease the first month or two as can be borne by the healthy tissues. In this way the malignant disease is destroyed while it is yet more sensitive to radiation than the healthy tissues.

It was found that lengthening the exposures also increased the radiation sickness both in frequency and degree.

As it is the expense of giving a dose of the deeper therapy is greatly increased as compared with our former technique. One must therefore keep the practical side in mind until more powerful equipment is developed and some means found to reduce the expense, due not so much to apparatus, electricity, etc., as to human service.

Great caution must be observed to keep the filters in place in their full prescribed quantity. Increased protection is necessary for both patient and operator. The clinical results obtained from this new deeper technique excell those obtained formerly.

—A. P. O.

THE ORDER OF PUBLICATION OF PAPERS.

Perhaps the readers wonder how the order of publication of articles in their Journal is determined. There is no fixed rule for all cases, there is no partiality shown toward anybody; and the supposedly best laid plans of the editor may need to be modified when it comes to the making up of the page proofs to fit the allowable space.

Certain definite principles govern, however. The Publication Board favors symposiums. The July number was planned as a "baby's first summer" number because it was seasonable; the September number, a cancer symposium, because we had the material for a symposium and for the further reason that a nation wide educational propaganda on cancer had been planned for that month.

Papers read at the annual meetings are published as nearly as may be in the order of their importance, or their seasonability. The same may be said of papers submitted directly to the editor. All cannot be published at once. Importunities of writers for early publication are rare, and are not looked upon with much favor by the present management.

The late Dr. John B. Hamilton, while editor of the Journal of the American Medical Association, told the writer upon an occasion, that he had hundreds of papers all wanting publication at once, and he was trying to do the best he could to accommodate them.

And better than that, no man can do.

SERVICE TO THE COMMUNITY.

Service to the sick, and thus service to the community, is the highest ideal of the medical profession. Service is the end of all vocations. The well established institutions for service are those that overcome the ignorance of the world—the schoolhouse and its teachers; those that tend to give charity—the almshouse and the welfare workers; those that try to eliminate sin—the churches and the clergymen. Last but not least is that institution which does its best to relieve human suffering, made up of physicians, hospitals, and research workers. All who have received training and who are giving their time in any of these four fields are doing the highest type of social service.

The highest ideals grant to physicians no opportunity to make fortunes from the misfortunes of others. A good living, repayment for education, and maintenance is keeping with the dignity of a learned profession are the legitimate ends in the financial reward.

Certain tendencies in medical development have done much to threaten these high ideals. Periodic progression has characterized the growth of medicine. When great discoveries have been made, progress has stood still for a time while the art of practice has adjusted itself. In periods of halting, only men with great personalities make any impression, and then only time will tell if they have contributed anything of merit. The end of the 19th century saw the development of structural pathology and bacteriology. The names of Virchow, Pasteur, Koch and Lister live. The art of practice for a time was threatened by divorce from science through the overdevelopment of the laboratory. In another quarter of a century, stress on functional studies and biochemistry left pathology behind. Pure science has always had its place. But when it is separated from the art of practice it is doing the practitioner but little good. The tendency today is toward a mechanical diagnosis. This should not be, for too often judgment is left out.

A diagnosis has been called "An evaluation of symptoms and signs, recorded by all available means and interpreted with the critical judgment of a large common sense."

Dangers of separation of the actual and the ideal, of the science and the art, are only threatened and can be avoided. Today we are in the halting period, waiting for the art of practice to adjust itself to that which is mechanical and to the discoveries of the laboratory.

A physician must be broader than his profession. He must perform in his community more service than that of visiting the sick. To acquire a proper value of a patient's place in his own surroundings, he must have the experience of knowing that community's interests and knowing the people in it. At the door of a modern out-patient clinic sits a trained social welfare worker who interviews every new patient. The primary object is not to find out if they are poor or rich, but to find out if in some way they are misfits in their environment. In practice among the more favored classes just such a survey must be taken. One who lives his own life in a community is in a better position to give the much needed advice. This is certainly apart from the science of practice, and still further removed from the mechanics of diagnosis.

To one person is given the power to value all the attributes of a good diagnosis. If the task is too great to make it all alone, then through cooperation may the end be attained. The art and science can never be separated. Correlation of minds is as important as the collection of data. If the laboratory and its deducted facts ran ahead of the ability of the profession to use them, so there may be again a halting until the art of practice adjusts itself to the latest swing of the pendulum. For the greater service, the physician must be a part of the community, serving in keeping with the ideals of the profession.

—E. W. R.

HEALTH AND SANITATION.

Prevention of the venereal and tubercular plagues, and the control and prevention of disease in general, are demanding and receiving a large share of the time and attention, not only of the national government but of many state administrations. Not so much care perhaps for the welfare of the human race as for the so-called brute creation, but we are making progress and in time our law making bodies will awake to the truth that the lives of a family of children are at least as valuable as a litter of pigs. A study of the laws of our own State will show that our methods of dealing with contagious disease, quarantine and sanitation are not such as to obtain the best results.

Legislatures are at all times held up to ridicule and criticism for the loose and unnecessary laws which they dump upon the heads of all unoffending, unprotected and long suffering people. Much of the criticism is perhaps unwarranted, but when it comes to the making of laws for protecting life from disease and death, anything seems to get through.

Great care is taken to protect life and property from murder, arson and theft, and to provide severe penalties for the guilty, but very little thought is given to penalty for violation and non-administration of laws which mean salvation or death from disease.

A review of the health laws passed by the legislature of 1919 would seem to indicate that the lives of the people of Omaha and Lincoln were more valuable than those who dwell in the smaller cities and villages. Omaha is required to have a health commissioner who shall devote his entire time to his office, and is allowed as many assistants as he requires. Lincoln, which is also in a class by itself, must have a Board of Health like the smaller cities but it is "recommended that a health commissioner be appointed who shall have charge of all health matters."

The smaller cities must have the same organized board of five members, but the chief of police is the real live active member of the board. He must be secretary, receive reports from attending physicians, or from head of the family if no physician is employed, do the quarantining, or to quote the law: "Keep a record of all cases reported, the date that quarantine was established, the minimum time for release, and whether or not at that time conditions are such as to permit patient to be released." Police officers as a class are hardly qualified for such responsibility

The villages and counties must be satisfied with a board of three members. The marshal of the village is the secretary and quarantine officer, and the superintendent of public instruction the secretary, and the sheriff the chairman and quarantine officer of the county board.

The advisory member of city, village and county boards is to be a physician and a figurehead. The doctor, of course, is always expected to work for nothing; the other members are already drawing good salaries. But the dear people's pocket books must be protected, and taxes must be kept down. We will take chances on the lives of our families.

R. McC.

GENERAL NOTES.

Registration at the Nebraska University College of Medicine for 1921 will take place Sept. 14-17.

Registration at the Creighton University, College of Medicine, will occur Sept. 21-22.

A free Physician's File Box, also samples of baby foods are offered by the Mead, Johnson Co., Evansville, Ind., in their advertising in this Journal.

At the last meeting of the State Medical Examining Board it was decided to hold a special examination for the benefit of those medical practitioners who were licensed upon presentation of diploma during 1903 or prior to that date.

This examination is not compulsory, but is given for the benefit of any practitioners licensed by diploma who wish to become licensed by examination.

The examination will be held at the State House in Lincoln, September 5th and 6th.

SOCIETY NOTES.

A Clinical Meeting With An All-Star Cast.

An attractive innovation in medical meetings has been undertaken by the Mississippi Valley Medical Association, to be held in St. Louis on October 13, 14, and 15. For this occasion a most unusual program, entirely free from the ordinary trite and formal medical paper reading, has been arranged.

Program participants have been carefully selected from eminent specialists among the leading authorities in the various fields of medicine. The preliminary announcements contain such names as Dr. Llewellys F. Barker, of Baltimore; Dr. Anthony Bassler, of New York; Dr. Chas. H. Frazier, of Philadelphia; Dr. John de J. Pemberton, of Rochester, Minn.; Dr. Isaac Abt, of Chicago; Dr. C. Jefferson Miller, of New Orleans, and others of equal prominence. These noted clinicians have accepted invitations to give scientific addresses (not papers) consisting of clinical demonstrations and discussions upon borderline subjects pertaining to their particular specialties. Because of their clinical bearing and wide medical scope, the subjects chosen will undoubtedly be of more interest to the general practitioner than to the specialist.

The third day of the program will be given over to clinics in the various St. Louis hospitals and universities, at which the guests of this Society as well as St. Louis physicians will participate.

The date of this meeting coincides with the Centennial Celebration and Pageant of St. Louis, which event will no doubt afford additional means for entertainment and social enjoyment to those attending this meeting. Dr. William Engelbach, University Club Bldg., St. Louis, is chairman of the committee of Arrangements and will gladly answer inquiries requesting further information.

"Medical Veterans of the World's War" — "Missouri Valley" and "Southwest" to Meet in Kansas City.

The "Southwest" and "Missouri Valley" Medical Associations will hold their joint session in Kansas City, October 25 to 28, 1921. Dr. E. H. Skinner of Kansas City is the "Southwest" president, and Dr. W. O. Bridges of Omaha is president of the "Missouri Valley." A four-day meeting is being planned with clinics in the various hospitals each morning and reading of papers in the afternoons. Five sections will hold sessions, comprising Medicine, Surgery, Obstetrics, Eye and Ear, and Genito-Urinary. Two general sessions will be held, and one evening session, when the orations will be given. Arrangements for clinics are being made by the officers and committees of the "Medical Veterans of the World's War," which body will be in session during the week. On Monday, October 24, the "Mid-Western Association of Anesthetists" will be organized and present a program. Dr. Morris H. Clark, Secretary, Rialto Bldg., Kansas City, Mo.

Thus will be provided a full week of rare intellectual entertainment in Kansas City, where every doctor, be he general practitioner or specialist, will find an abundance of pabulum for brain absorption, as well as ample recreation for his physical improvement and soul inspiration.

Mid-Western Association of Anesthetists—Organization Meeting, Kansas City, Mo., Oct. 24-28, 1921.

The Anesthetists of the Middle West will hold an Organization Meeting in Kansas City, Mo., October 24-28, in conjunction with the meetings of the Medical Veterans of the World War, Missouri Valley Medical Association, Medical Society of the Southwest and the National Anesthesia Research Society.

A splendid scientific program of pertinent papers is in the making for this occasion and the Clinics to be held will offer every opportunity to see and demonstrate the latest methods of anesthesia.

Membership in the Mid-Western Association of Anesthetists is open to all licensed and qualified members of the medical and dental professions as well as to research workers holding doctorates of similar standing, who are interested in advancing the science and practice of anesthesia.

A Special Session will be devoted to Anesthesia for Oral Surgery and Dentistry.

Headquarters will be at the Hotel Muehlebach and the Scientific Sessions and Annual Dinner will also be held there. As a large attendance is expected at this Joint Meeting make your hotel reservations now.

If you wish to present a paper during the meeting kindly notify the Organization Secretary at once, giving the title and brief abstract of same.

Fill in the details of the enclosed Membership Application and return it with your check or money order for the annual dues ($5) so that your Charter Membership Card may be sent you. Also send in the names and addresses of as many prospects for membership as you may know of.

The Visiting Ladies will be delightfully entertained so let the Secretary know how many will be in your party.

The following are the officers for the Organization Meeting: President, R. M. Waters, M. D., Sioux City, Iowa; Vice-Presidents, David E. Hoag, M. D., Pueblo, Colo., and Nettie Klein, M. D., Texarkana, Texas; Secretary-Treasurer, Morris H. Clark, M. D., Kansas City, Mo., and Members of the Executive Committee, B. H. Harms, D. D. S., Omaha; J. E. Craig, D. D. S., Kansas City; A. E. Guedel, M. D., Indianapolis; R. S. Adams, M. D., San Antonio; R. L. Charles, M. D., Denver, and E. M. Moorehouse, M. D., Yankton, S. D.

The Organization Officers and Executive Committee will do everything they can to make this meeting interesting, instructive and enjoyable and your cordial co-operation and support are solicited in launching the Mid-Western Association of Anesthetists on a successful career for the benefit of all concerned.

For further information, address, F. H. McMechan, M. D., Organization Secretary, Lake Shore Road, Avon Lake; Morris H. Clark, M. D., Secretary-Treasurer, Rialto Bldg., Kansas City, Mo.

The Saline County Medical Society held its monthly meeting at Wilber on July 12th, at which time Dr. I. A. MacKinnon, of Lincoln, addressed the society upon "The Use of Local Anesthesia in General Surgery," which was followed by a general discussion.

The August meeting of the Saline County Medical Society was held at the Hotel Del Coronado at Friend on August 9th. Dr. Palmer Findley, of Omaha, state lecturer for the American Society for the Control of Cancer, gave an illustrated lecture on "The Cancer Problem." More than thirty physicians were present from thirteen different towns in Seward, Fillmore and Saline counties.

The Second Annual Reunion of the 89th Division Medical Officers will be held in Kansas City on Oct. 28, 1921.

The members of the Custer County Medical Society held their annual picnic at the Humphrey ranch Aug. 10th.

Before the Madison County Medical Society, Dr. Alfred Schalek, Omaha, gave a lecture on Syphilis, Aug. 4th.

HOSPITAL NOTES.

The hospital built by Dr. and Mrs. E. C. Henry, Omaha, as the Lord Lister hospital, afterward sold to Danish church interests and named Fenger Memorial hospital, has again reverted to the Henry interests and bears its original name, Lord Lister.

The General hospital, North Platte, has been taken over by Dr. O. R. Platt who recently moved there from Plattsmouth. (Dr. Platt, Plattsmouth, North Platte!).

Dimick hospital, Scottsbluff, has been opened by Miss Mabel Dimick, a well known graduate nurse of considerable executive ability.

Injunction proceedings have been instituted against the Evangelical hospital association to restrain the organization from building and operating a hospital in a certain residential section of south Lincoln.

The W. C. T. U. is talking of a state hospital and the Kearney membership of that organization hopes to set on foot a movement to secure the proposed hospital for that city.

The Arapahoe hospital was damaged by fire the last day of July.

For Sale—Radium—One hundred miligrams in 25 miligram tubes; all or any 25 miligram parts offered at big saving over present market price. Shipped to you direct from Bureau of Standards, Washington, D. C., with government certificate for same. Container and full set of four screens with each tube. Address Cooperative Bureau, 535 N. Dearborn St., Chicago.

NOTES ABOUT THE DOCTOR.

Dr. C. E. Frey, formerly of Ceresco, has moved to Lincoln.

Dr. G. A. Young, formerly of Ponca, has located at Norfolk.

Dr. F. A. Sedlacek has become assistant health officer of Omaha.

Kimball has a new practitioner in the person of Dr. J. R. C. Carter.

Dr. Chas. E. Heider, formerly of Elm Creek, has located at Sutherland.

Dr. and Mrs. C. A. Slagle, Alliance, have returned from a trip to Europe.

Dr. F. J. Wearne, Omaha, has returned from a two months' trip to Alaska.

Dr. Z. L. Kay, McCook, underwent an operation in an Omaha hospital recently.

Dr. Frank G. Salter, Pierce, accompanied by his father, visited in Upper Canada.

Dr. T. J. Lawson, Long Pine, made a midsummer trip to Toronto, visiting relatives.

Dr. H. G. Penner, Plymouth, has gone to Colorado Springs on account of his health.

Dr. Kenneth L. Thompson has moved from Omaha to Oakland, Iowa, to engage in practice.

Dr. D. D. Raber, Tilden, suffered a broken leg when his car slid down a soft embankment.

Dr. B. Charles Pease, specializing in eye, ear, nose and throat work, has recently located at Sidney.

Dr. J. A. Strong, formerly of Kearney, but for the last year at Mullin, has returned to Kearney to practice.

Dr. Richard Thompson, son of Dr. T. D. Thompson, West Point, has gone to New York City to engage in practice.

A Gresham physician has found it necessary to resort to the courts to get some of his neighbors to keep the peace.

In a north Nebraska town a doctor and a malted milk man mingled too freely with a resulting black eye and a fine of $9.85.

Dr. H. W. Patchen, formerly of Phillips, has located at Winnebago and has purchased the office outfit of Dr. C. J. Beirne.

Dr. Charles J. Beirne, formerly of Winnebago, has moved to Quincy, Ill., where he will be associated with his brother, Dr. Henry P. Beirne.

An Alliance doctor was fined for violating the traffic rules by turning his car in the middle of the block, the quicker to reach a child in convulsions.

Dr. E. B. Downs, formerly of Kilgore, has received an appointment in the Soldiers' Home Hospital Service and has moved to National Home, Wis.

Dr. C. M. Hyland, Palmer, has sold his equipment to Dr. Shaller of Omaha. Dr. Hyland has gone to the Leland Stanford university to do postgraduate work.

Dr. J. F. Edwards, former health chief of Omaha, has accepted a position at Iowa State College, Ames, as head of the department of hygiene and student health.

Dr. A. P. Fitzsimmons, formerly of Tecumseh, an official in the Philippines since 1913, part of the time treasurer of the Islands, is returned to the United States.

Dr. S. O. Eads, Decatur, Ill., twenty-six years ago a practitioner at Beaver Crossing, visited the latter place recently on returning from a trip to Colorado Springs.

Dr. J. M. Soper, formerly of Shelton, has moved to Grand Island to practice surgery. Dr. G. H. DeMay, who was associated with Dr. Soper, continues the work at Shelton.

Dr. W. J. Hemphill, North Loup, accompanied by a party of young people, made an auto trip to Yellowstone Park, Salt Lake City and other places of interest during the summer.

Dr. C. L. Egbert, Hastings, who underwent a very serious operation in May, spent the period of recuperation doing postgraduate work in Chicago. He returned to his work a few days ago.

NECROLOGICAL.

Dr. Josephus Williams, one of the earlier graduates of the Omaha Medical College, died at Hood River, Oregon, aged about 73. Dr. Williams was the first physician at Kenesaw, Neb., where he was engaged in practice for 28 years before moving to Oregon.

Dr. J. W. McKibbon, pioneer physician at Adams, died August 12, aged about 70. He was a graduate of the Northwestern University Medical School, Chicago.

HYMENEAL.

Dr. Harry E. Flansburg and Miss Helen Allensworth, both of Lincoln, were married at the latter place July 20.

Dr. I. W. Churchill and Miss Nora M. Haskins, University Place, were married August 6.

Dr. George Tilden, a practitioner in Omaha since 1868, died Aug. 16, aged 79. He was a graduate of the Albany Medical College, 1867. Dr. Tilden was medical member of the commission of insanity for Omaha and Douglas county for forty years. He was also one of the ablest of the old time practitioners.

NEW AND NONOFFICIAL REMEDIES.

Argyn.—A colloidal compound of silver oxid and serum albumin, containing from 25 to 30 per cent. of silver. The silver is in a form not readily ionizable. Argyn has the actions and uses of silver protein preparations of the argyrol type (see New and Nonofficial Remedies 1921, p. 330). It is employed in from 10 to 25 per cent. or stronger "solutions" (colloidal suspension). The Abbott Laboratories, Chicago, Ill.

Casein.—Caseinas.—The protein separated from milk by the action of acids or enzymes and purified. It contains not less than 15 per cent. of nitrogen, calculated on the moisture free material. Casein is used as a food, being added to other ingredients of the diet when it is desired to increase the content of protein in the diet. This occurs occasionally in the feeding of infants, in the nutrition of adult convalescents and undernourished persons, and in the dietotherapy of diabetes. Casein is also used in the preparation of special foods for diabetics or others for whom a regimen poor in carbohydrate and fat may be desired. When incinerated, casein should not yield more than 2 per cent. of ash. It should contain not more than 10 per cent. of moisture and not more than 1 per cent. of fat.

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CONTENTS

	Page
The Treatment Of Diabetes Mellitus, Arthur D. Dunn, M. D., Omaha	297
Functional Diagnosis, C. R. Kennedy, M. D., Omaha	302
The Passing Of The Family Physician, J. Lue Sutherland, M. D., Grand Island	305
Report Of Female Infant With Double Inguinal Hernia, Prolapsed Tube And Ovary—Operation—Recovery, Etc., H. M. McClanahan, A. M., M. D., F. A. C. P., Omaha	307
A Plea For More Carefully Planned Tonsillectomies, C. G. Baird, M. D., Beatrice	310
Some Practical Points About The Tonsils, James C. Tucker, M. D., Omaha	311
Clinical Syndromes In Serous Meningitis Following Infectious Diseases, G. Alexander Young, M. D., Omaha	312
Methyl Alcohol Poisoning, Francis W. Heagey, M. D., Omaha	316
A Civilian Surgeon's Story Of The Great War, H. W. Orr, M. D., F. A. C. S., Lincoln, Neb., Formerly Lt. Col., M. C. U. S. Army	319
Editorial	324
Hospital Notes	327
Society Notes	327
Notes About The Doctor	328
Hymeneal	328
Necrological	328

THE TREATMENT OF DIABETES MELLITUS.*

Arthur D. Dunn, M. D., Omaha, Nebraska.

“Since approximately one death out of each 100 deaths in the United States is due to diabetes, one might be tempted to assume that one per cent of the living population will have the disease.” (1) Barringer, (2) basing his estimate on 72,000 life insurance examinations in New York City, concludes that nearly two per cent of the adult population has the disease. The last census (1920) gives the population of Nebraska at 1,295,502. From Barringer's estimate we might assume that there are approximately 2,000 diabetics in Nebraska and that every physician must see one to five cases each year.

The mortality statistics for Omaha for the year 1920 show the deaths for every 100,000 population to be 242 from tuberculosis; 41 from cancer and malignant tumors of the female genitalia; 8 from cancer of the breast; 6 from Graves disease, and 34 from diabetes. With these statistical facts in mind, we may well ask ourselves the question: Is a disease of such comparative moment receiving the attention at the hands of the medical profession that it deserves? A review of the programs of the Nebraska State Medical Association for the past ten years attests the fact that it is not. Does the average diabetic patient receive from his physician the treatment for this disease that available scientific knowledge should assure him? Are we not applying our science and art better to diseases of much less vital importance because in the latter, therapeutic results are more easily obtained, more immediate and more spectacular? My observations have convinced me that the diabetic patient is not getting all that is coming to him. The purpose of this paper is to sketch in a rough way some of the more salient principles involved in the present day treatment of diabetes and to discuss the methods of their application to the individual patient.

FUNDAMENTAL PRINCIPLES AND CONCEPTIONS.

According to Macleod, (3) diabetes first appears as a weakened function of carbohydrate metabolism, next there is a weakened function of protein metabolism, and then in severe cases an imperfect metabolism of fat. Allen says that if we follow this plain, simple idea, it guides us to a rational therapy. It emphasizes diabetes as a weakened function and not a progressive disease and if we face it with the conception uppermost of a weakened function we can accomplish the most for our patients. The ultimate cause of diabetes lies in agents acting in a deleterious manner on the islands of Langerhans in the pancreas; without pancreatic disease, diabetes does not exist. The only experimental means of producing true diabetes is by excision of about nine-tenths or more of the pancreas. The islands of Langerhans elaborate a hormone that is essential to the assimilation, storage, mobilization and combustion of carbohydrates. With a deficiency in the island hormone "the tolerance of the body for glucose" (4) decreases, sugar which the cells are unable to utilize piles up in the blood, and when it rises above the kidney threshold (about .17%) it spills into the urine and glycosuria, the most important symptom of diabetes, appears. The normal body tolerance for glucose injected intravenously lies between 0.8—0.9 gms. per kilo of body weight per hour in the dog, rabbit and man. (5) By mouth the normal 70 kilo individual will take 100 grams of glucose at one time without sugar appearing in the urine. If sugar appears in the urine on ingestion of 100 grams of glucose at one time, the individual is a potential diabetic. The specific agents which injure the islands have not been definitely determined. The pathology is commonly that of chronic interstitial pancreatitis (or fibrosis of the pancreas) with involvement of the islands or progressive degenerative changes in the island cells such as vacuolization of cytoplasm, pyknosis of the nuclei, loss of granulation with final disappearance of the cells. Opie's original observation was made on a case of chronic interstitial pancreatitis associated with biliary disease which had accomplished destruction of the islands. Arteriosclerosis with resultant impairment of the nutrition of the island cells has been repeatedly demonstrated. It is a well known clinical fact that diabetics do poorly when carrying the extra load of an infection. I have seen several cases in which it was impossible to gain a satisfactory tolerance for carbohydrates until badly infected tonsils had been removed. The assumption of a selective action on the part of certain bacteria for the islands of Langerhans is not irrational. The etiologic claim for syphilis made by Warthin and others does not seem to me to be well grounded. The incidence of a positive Wassermann test in our diabetics does not run above that for all patients. From our scant knowledge of specific agents affecting the islands of Langerhans we can deduce one therapeutic corollary: all demonstrable infection should be consistently treated or removed when we know the removal to be safe and when it will not jeopardize function such as the wholesale removal of questionable teeth.

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*Synopsis of a discussion on the Treatment of Diabetes Mellitus given at the Nebraska State Medical Association, Lincoln, May 11, 1921.

BLOOD SUGAR.

The question of blood sugar chemistry cannot be omitted from a discussion of diabetes although from the patient's standpoint the study of his blood sugar is of very much less value than many of the things that are commonly neglected in his treatment, e. g., providing him with a set of self registering food scales and teaching him how to use them. Blood sugar analysis is a refinement in diagnosis that does not yield returns to the individual patient commensurate with the time, labor, and inconvenience involved. Blood chemistry has added much to our knowledge of diabetes but its chief clinical value lies in enabling us to diagnose the rare renal diabetes, to detect the hyperglycemia occurring in chronic nephritis with hypertension, in arteriosclerosis and in cardiac disease where the kidney threshold for sugar is abnormally high, and to study transient glycosuria and sugar tolerance — all relatively less essential refinements of diagnosis and treatment. I do wish to emphasize the fact that diabetic patients can be treated reasonably well without such estimations and that for reasons which will appear later, the treatment of diabetes should be kept as simple as possible.

TREATMENT.

In no disease are physician and patient more closely linked than in the treatment of diabetes. Except in a very few instances the duration of the disease is for life and the length of that life depends on the knowledge which the patient has of his disease and how he uses that knowledge. It is essential that the physician understand the disease well in order that he may best teach his patient how to live with his disease. Aside from the removal of infection, the treatment of impending coma, and the treatment of complications, the function of the physician is solely that of an educator and his value as an educator will depend on his conception of the disease and of the objectives to be attained.

The rational therapy of diabetes has as its main objective the sparing of the pancreatic hormone and the protection of the islands of Langerhans. The sparing of the hormone automatically leads to an increase in its activity. By the method of "sparing", a satisfactory tolerance for carbohydrates and an adequate metabolism can be built up except in the severest cases. The key to the sparing of the hormone is undernutrition. The body weight must be kept down. The diet must be so constructed that it is utilized without waste and it is seldom that the restriction of carbohydrates alone brings success. Pancreatic function is spared when the same number of cells metabolize a reduced quantity of food materials. (Allen). Joslin (6) has emphasized the role of obesity in the development of diabetes. Allen (7) stated that in experimental diabetes there is a quantitative relationship between the mass of pancreas and the mass of body which it can supply with hormone. He showed that assimilative power of diabetic animals rises and falls inversely with the body weight. Animals from which nearly 9/10ths of the total pancreas mass have been removed, leaving the head and ducts, are not diabetic. If overfed and fattened they can easily be made diabetic. Accumulation of fat or increase in body weight in some manner increases the burden of island function while reduction in weight decreases it. Mild exercise as part of the undernutrition scheme is of value. Mild diabetics do much better if a goodly portion of their time is spent at congenial out of doors exercise or work. Emotional upheavals and business strain are bad for diabetics. Allen (8) showed in his experimental work on dogs that exercise favors carbohydrate assimilation over long periods especially in mild cases but it loses its effectiveness not with time but with the increasing severity of the diabetes. Exercise can atone to some extent for indiscretions in diet and weight but cannot safely be used as a substitute for dietary restrictions and the attempt to force the diet to the utmost and burn up the surplus calories with exercise ends finally in disaster. Diabetic dogs that were heavily fed and severely exercised rapidly developed fatal coma.

There are certain axiomatic facts in the treatment of diabetes which have been established both by experience and by experiment: (1) The diabetic can live and be efficient on a caloric intake inadequate for the normal individual. Diabetics can be well nourished on 20 to 30 calories per kilo of body weight if the food is properly apportioned between carbohydrate, protein and fat. Trouble comes as a rule from excess of food and from improper apportionment of the respective foods; (2) The essential thing is to establish a carbohydrate tolerance and in most instances this can be effected so that the patient is able to utilize 100 to 200 grams daily; (3) Sufficient protein must be supplied to maintain nitrogenous equilibrium; at least one gram of protein per kilo of body weight per diem is necessary. It must be remembered that for each gram of nitrogen appearing in the urine 6.25 gms. of protein must be burned and that 3.25 grams of the 6.25 grams of protein, or 60%, is dextrose. The severer types of diabetics are unable to burn protein without the excretion of part of it as sugar in the urine. This potential weakened function of protein metabolism must be stressed because it is customary to allow diabetics protein in whatever quantities desired: (4) In the von Noorden-Naunyn treatment, fats were allowed ad libitum. Ladd (9) has shown that one gram of carbohydrate must be burned in order to accomplish the complete combustion of 2.3 to 4 grams of fat. Fats burn well only in a carbohydrate fire. It does not matter whether the carbohydrate is ingested as such or whether part of it comes from the dextrose fraction of the protein molecule. If the carbohydrate fat ratio is brought below a certain point the fats burn poorly, smudge so to speak, and the symptoms of acidosis appear. Acidosis is to be avoided only by fat starvation. Feeding carbohydrates with elimination of fats checks acidosis.

HOSPITALIZATION.

Diabetics are safe so long as they remain in the hospital. If temporary safety is all we propose to give our patients, it were almost better that they did not enter the hospital. The hospitalization of diabetics should be made for two purposes: first, a full study of the individual case, rendering him sugar free, and establishing the limits of his tolerance for glucose; second, education.

Various methods may be used for rendering the patient sugar free, depending on the existence and degree of the acidosis. Starvation may be used from the beginning in mild cases. In cases with acidosis it is best to eliminate the fat first; then the protein, taking about two days to do it; then the carbohydrates in three to five days; then starvation until sugar free. The method of rendering the patient sugar free must be adapted to the individual. After the patient is sugar free, carbohydrate tolerance should be built up by adding five grams of carbohydrates daily in the form of five per cents, then ten per cents until 50 to 75 grams of carbohydrates are tolerated. Protein is then rapidly added until the patient receives at least 1 gram per kilo of body weight. At this time fats may be added gradually. Starvation and green days may be provided in a manner suitable to individual cases. The educational phase is the most important feature of the patient's stay in the hospital. The patient should learn the percentage of carbohydrates, protein and fats in the foods entering into his menu and should be able to compute his caloric intake and apportionment of food in his diet. He or somebody responsible for his diet should be put under the tutelage of the dietician and assist in the preparation of his meals. The patient should be quizzed by the physician until he knows the composition of food stuffs and can construct on paper a diet calling for a certain number of calories carrying definite carbohydrates, protein and fat limitations. He should practice weighing until he can accurately estimate the weight of various food portions without the use of his scales. He should know how to test his urine for sugar and for diacetic acid and what to do in the event either is found. When the diabetic has learned these things he is fit to be entrusted with the care of his own case and to be discharged from the hospital.

Conferences with the physician must be held at frequent intervals until it is evident that the patient is well established in the method of handling his case. After that the patient need only consult the physician at intervals of several months unless complications arise or he feels he needs enlightenment on certain points.

CONCLUSIONS.

The diabetic should go to school to learn how to save his own life.

A rational treatment rests on the conception of diabetes as a weakened function of metabolism and that it is by sparing and protecting this function through undernutrition that the best results are to be obtained.

DISCUSSION.

Dr. J. C. Waddell, Beatrice: So excellent a presentation as Dr. Dunn has given us on so interesting a subject should not go undiscussed. It seems to me we are going to have to educate the public in some way to report to their physician, or to some capable physician, at intervals, for a physical examination, if we are going to be able to get at these conditions early enough to do the most good. Too often a diabetic reports so late he is in the classification of the severe case, and the treatment is instituted so late we do not get the prolongation of life which could have been gotten had he reported earlier.

I think that we cannot too strongly emphasize the importance of hospitalization of thse cases as soon as the diagnosis is made. It is of value for two reasons: First, in order that we may classify the patient as a mild, medium severe, or very severe case; that we may determine his carbohydrate tolerance, and, as Dr. Dunn has so ably emphasized, may educate him in the importance of following out this diet if he wishes to save his life, or prolong it.

I think the treatment of diabetes has been very well worked out. We realize that it is a disease of metabolism. If this type of patient is to add days or years to his life, he must conserve that particular function of his body.

Dr. Albert Lynch, Fairbury: It is presumptuous for one not in the active work of treating diabetes to attempt to discuss this excellent paper. However, we can not resist the temptation to ask why the doctor does not mention the endocrine glands which we believe play a very important part especially in classifying cases with sugar in the urine for the purpose of treatment and prognosis. Also, to say a few words about a simple clinical classification of our own which we have found helpful when we were treating these cases.

Under the word, idiopathic, we group those cases that run a course of diabetes and that post-mortem do not show any definite etiological pathology, in the islands of Langerhans or elsewhere. These are difficult to treat successfully and usually their prognosis is bad.

Next, the pancreatic group in which the pancreas is secondarily involved from focal infection in the bile ducts, tonsils, teeth, sinuses, etc. If the primary focus can be located and cleared up, the prognosis is better than in the idiopathic group.

Next, the cases we find in people past middle life,—with senile arteries and eye ground symptoms,—the circulatory group. Much in the way of treatment can be done for these cases and the prognosis is not so bad for relief from glycosuria.

Again, we find cases in early life with a family history of diabetes. If these cases are discovered early, they usually do well under such management as the doctor has outlined and lastly, we have a few important cases, with sugar in the urine, that are undoubtedly associated with hyperactivity of the thyroid, adrenal or pituitary glands which apparently show antagonistic action to the pancreas. Whether they function by acting on reserve sugars only of the muscle cells, liver, etc., or by neutralizing the pancreatic amboceptors spoken of by Allen or what, so far as I know, has not been explained, but, clinically, these cases with sugar do clear up after the offending gland has been treated and in all these cases, the result of the treatment has a definite relation to the treatment on the gland involved.

Dr. M. L. Hildreth, Lyons: I have been treating diabetes for forty years, and there are some questions that have interested me. It is unnecessary for me to attempt to cover the field, but I should like to ask Dr. Dunn to explain why young diabetics die, and those in middle or advanced life will live forever, under the same routine? I believe "Once a diabetic, always a diabetic," is true; but I have never seen a young child who was a saccharine diabetic get well, or live longer than two or three years. I have tried to make a careful study of it, because I have treated a great many cases.

I should like to have Dr. Dunn suggest if the hospitalization in these younger cases would be as effectual in prolonging the life of the child as we know it is in advanced life?

We have all seen diabetics die. They all die the same way. Aside from complications, it is either inanition, acidosis, or coma convulsions. I have thought the overingestion of sugar for the last few years has had something to do with that increased diabetic condition. I do not know whether this might be called a pathological or a dietetic condition. According to statistics, we are using ninety pounds of sugar per capita in a year, whereas twenty years ago it was eight pounds.

As Dr. Dunn said, it is a question of education. I do not know why a family doctor, if he is careful and persistent, cannot help these patients without the hospitalization; yet I believe that hospitalization is a good thing, especially at the start. I had a diabetic patient who died a short time ago. I had had him for twenty years. He could make a quantitative analysis as well as I could. He carried his test tubes to make his analyses. He had his tolerance so nicely adjusted he knew more about it than I did, I thought.

Statistics show diabetes is one of the most important things we have to consider today in the general treatment of disease, and I wish Dr. Dunn would outline more of these points. It is a serious question.

Dr. A. D. Dunn, Closing: I confess to having very carefully avoided the problem of the other ductless glands. A discussion of that relationship would lead us far afield, get us too much into theorization and be to no purpose. I remember well a diagram that Von Noorden used, to show a hypothetical interglandular arrangement and its effect on carbohydrate metabolism through the pancreas and liver. There is no question but that there is some definite interrelationship between the other ductless glands and the islands of Langerhans. These glands have a profund influence on metabolism and are an interlocking directorate that rather determines the destinies of the individual. The ductless glands largely determine growth, and growth is a function of metabolism. They determine the development of the secondary sex characteristics, and often also whether a man is to be a respected citizen or a criminal. There is one outstanding fact, however, and that is, that the only way one can produce a real diabetes (not glycosuria) experimentally is by destroying a large part of the pancreas. I tried to emphasize the fact that the etiology of diabetes is still undetermined. I realize that there are a number of cases in which the pathologist fails to establish any disease of the islands of Langerhans. That is one of the reasons why we tried to emphasize this conception of disturbed function, as contrasted with disease. The adrenal plays a definite role in the metabolization of carbohydrates. Undoubtedly studies to determine the relationship of the other ductless glands to the islands will bring out something that is fruitful, but I think that we today are a long way from solving the diabetic problem by a study of the ductless glands until the pancreatic hormone is found.

The question of Dr. Hildreth—why diabetes is more severe in the youth than it is in the elderly adults—I cannot answer. There is probably a difference in the pathological processes in the young individual and growth may be a factor. It is in the elderly cases that we find obesity and overnutrition. Diabetes in the young and the old presents conditions which seem to be quite apart, yet they are produced through a disturbance in the same mechanism.

I am glad the point of the family doctor treating diabetes was brought up. If he will take the time and have the patience to teach his patients their disease and how to combat it, he can treat the disease successfully. There is one big advantage, however, in hospitalization, and that is that you have the "machinery," you have the dietitian and interns who can assist in the teaching, and you have the patient with only the study of his disease on his mind. He is not thinking of a real estate deal, or some social function, or whether he will get his corn plowed. He has to learn his disease, and he usually wants to get the job done so that he can get back to his work or play; if his stay in the hospital depends on an examination he has to pass, he will work.

The pre-diabetic state has been emphasized by Dr. Joslin. A great increase in weight often precedes diabetes. In these cases, examination of the blood sugar might give us a clue much earlier than we could get it through the urine. Whether this is of commensurable value, I am uncertain.

In closing, I want to cite Balzac's "Wild Ass's Skin", an intensely dramatic parable which is applicable to the diabetic's problem. It is a bit out of the scientific but it is good literature and it illustrates the most important point of the paper:

A young chap who had lost his last gold piece gambling had decided to throw himself into the river and have it over. He was loafing around the quay waiting for night to do the job. He entered into a discussion with a curio-shop keeper. The old man said, "Do you really want life?"

The young man said that he did, but there was nothing in life for him.

The shop keeper took down a piece of old, dirty skin, on which there was this inscription: "If thou possesseth me, thou wouldst possess all. Wish, and thou shalt obtain thy wish. Measure thy wishes by thy life. It is here. At every wish I shrink. Dost thou desire me? Take me. God will grant thy wish."

The young fellow took the skin and plunged into riotous, reckless living. His every wish was granted. At first the skin did not seem to diminish appreciably. Then he noticed it was shrinking, and that every little wish counted bigger. Finally in order to be again in the arms of his wife, he made a last wild wish. The skin disappeared, and his destruction was accomplished.

The diabetic's Wild Ass' Skin is his limited pancreatic hormone. If he spends it recklessly he is finally reduced to periodic starvation or death, and after a bit there is no choice left but death.

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FUNCTIONAL DIAGNOSIS.*

C. R. Kennedy, M. D., Omaha, Neb.

On such occasions as this it is customary for the chairman of the section to attempt to outline to some extent the future progress of the work and I will, therefore, try to point out some things which I think should be used and developed more in the near future. I refer particularly to functional diagnosis.

By fuctional diagnosis I mean an estimation or diagnosis of the ability of an organ to carry on its work in contradistinction to a diagnosis, based on changes in size, location and consistency of an organ as made out by physical signs. Sir James McKenzie says disease progresses through four stages.

1. A predisposing stage in which the individual is still free from disease but inherently weak or vulnerable.

2. The early or curable stage when the disease has not produced any perceptible alteration of tissue and the symptoms are mainly subjective.

3. The advanced stage when the disease has progressed so far as to cause destruction or modification of tissue and when its presence is revealed by physical signs.

4. The final stage when the patient dies and the tissues are subjected to a post mortem examination.

We have been accustomed to make our diagnosis in the third and fourth stages because we have based our work on the physical findings and of course when an organ has reached the stage of physical signs the chances of restoring it to normal are not very good. We cannot diagnose disease in the first stage although we may suspect a tendency from family and previous history, but in the second stage, by careful consideration of the history and the functional tests we make a diagnosis in a great many cases and then correct the condition before the organ is badly damaged.

The very early clinicians based their diagnosis and treatment on the symptoms, appearance, and history of the patient; then the pathologist came in and examined the excretions, tissues, etc., and made a report on which too much dependence was placed. This led us into numerous mistakes. When we considered it necessary to find tubercule bacilli in the sputum before a diagnosis of tuberculosis could be made a great many cases were overlooked. But now instead of sending the specimen to the pathologist we take the pathologist to the patient and he makes whatever examination he thinks useful. Thus he becomes a consultant and his opinion is very valuable in the summing up of the problem.

As a result of this method the pathologist is constantly developing more valuable tests and putting them on a clinical basis and we are becoming more indebted to him every day.

So now we find the old pathology of Rokitansky as found in the dead house replaced by a pathology which works along the lines of physiology and chemistry, thus giving us the pathology of perverted functions. It is not only as a means of diagnosis that these methods are valuable, but as a means of prognosis and of lowering the operative mortality they are even more valuable.

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*Read before the Nebraska State Medical Association, Lincoln, May 12, 1921.

Along these lines I would refer, first, to basal metabolism which although of recent development has proven very valuable; especially in the study of hyperthyroidism, so valuable that C. H. Mayo in a recent article states: "A failure of diagnosis in thyroid disease is almost impossible if the basal metabolic rate is considered with the other general symptoms."

It not only makes the diagnosis certain but guides one as to the time to operate and the type of operation.

By the metabolic test and the use of thyroxin we are enabled to tell not only that the thyroid is hypo or hyperactive, but to what extent.

Going back to some of the older fields we find the urinary tests very well developed and by their use the mortality of prostatectomy changed from 25% to 3%. Among these tests we find the methylene blue, indigo carmin, rosaniline, phloridzin, potassium iodide and numerous others which have been discarded, but there remain a number which are of value, notably, the renal test diet which gives us an idea as to the ability of the kidneys to excrete water, sodium chloride, urea and nitrogen. This is very valuable but requires considerable work. A simpler test which is of value but not as accurate is the testing of two-hour specimens for amount and specific gravity; thus giving us a rough estimate of the ability of the kidneys to function under varied conditions.

Another test which is easily carried out is the phenolsulphonephthalein test and this usually corresponds quite well with the more difficult ones of test diet, blood urea, etc., but a single test must not be relied upon. It has been shown recently that the phenolsulphonephthalein output varies with the alkalinity of the urine and is possibly decreased in the presence of cyanosis.

The ordinary urinalysis gives us considerable information as to the functional capacity of the kidneys but Dieulafoy has well said: "It is not what passes by the kidneys that does the harm but what does not and as an index of what is retained we have the estimation of the blood urea and nitrogen." The old method of cryoscopy has proven unreliable.

In operating on the bladder it is only necessary to know the combined capacity of the two kidneys, but when operating on the kidney it is essential that we know the capacity of the other kidney. This is readily found by ureteral catheterization and examination of the separate urines. These methods have changed urology from a very uncertain specialty to one of the most accurate in surgery.

In the genital tract we do not make use of many tests although there has been a method brought out recently for testing the patency of the Fallopian tubes by means of the intrauterine injection of oxygen and the production of a pneumoperitoneum, which is demonstrated by means of the X-ray.

When we consider the gastrointestinal tract we find we have a number of tests which are of value.

First, in regard to the oesophagus, as its function is only that of carrying the food to the stomach, it is the interference with this function which calls our attention to disease there. This symptom may be produced by obstruction in the oesophagus or from paralysis of the epiglottis so that it does not close. This is best demonstrated by the fluoroscope and the opaque meal. Both liquid and solid food should be given as we find if the condition is paralytic the liquid media shows it best and if it is organic obstruction it is best demonstrated by solid food.

In the stomach we have a large number of methods. First, the stomach tube with examination of contents. Next, the administration of such things as raisins, followed by evacuation with the tube twelve hours later; thus showing whether they are retained or not. But the best test for motility of the gastrointestinal tract is the X-ray after the opaque meal.

Although I think the X-ray examination of the gastrointestinal canal yields the most information in regard to function, we must not neglect the stomach tube and gastric analysis. Our internists tell us, of all the stomach cases they see, ten have had a gastrointestinal X-ray to one who has had a stomach analysis. They should have both. While the gastric analysis gives us information as to secretions present, the X-ray tells us whether there is any mechanical interference or not and is therefore especially valuable to the surgeon.

Beyond the pylorus we meet considerable

difficulty in the functional tests, but since the advent of the duodenal tube we are able to study the duodenal and biliary secretions and derive a great deal of information therefrom. I think this method is destined to yield us a great deal of information concerning the function of the gallbladder, liver, pancreas and duodenum. At present it is very useful in our diagnosis and treatment of diseases of the liver and gallbladder.

At present our examination of pancreatic function is not very reliable and of all methods I should consider the fat content of the stool and Schmidt's cell nuclei test the most reliable. The determination of fat indigestion is not difficult and when we find over 40% of the fat ingested is lost in the stool, in the absence of jaundice, it means very serious disease of the pancreas, usually carcinoma.

Schmidt's cell nuclei test is based on the fact that the nuclei are not digested in the absence of pancreatic juice and is made as follows: Small cubes of beef are hardened in alcohol and then enclosed in small silk gauze bags which are easily recognized in the stool. These are ingested by the patient and then reclaimed from the stool. The tissue is then imbedded, cut and stained with hemotoxlyn. If the nuclei stain it shows an absence of pancreatic secretion.

Of course this by no means exhausts the methods which have been used and in this connection I would only mention the Desmoid test of Sahli, urobilinuria, the lipase content of the blood and a great many more, but these have not reached a point where they are of much value in clinical work.

There are several tests for function of the blood and vascular system which are important to the surgeon. Of course the estimation of blood pressure is too universal to require comment, but the matter of coagulation time is much neglected and we frequently see alarming hemorrhage or even death as a result of this neglect.

There are several methods for determining coagulation time, one of the best being by the use of the coagulometer of Boggs, which gives normal coagulation time of three to eight minutes. In the absence of such an instrument the method of Howell is the best and is quite accurate. Two to four cc. of blood are drawn from a vein and immediately expelled into a wide tube 21 mm. in diameter. The coagulation time is taken from the moment the blood is drawn until the tube can be inverted. Normal time is from twenty to forty minutes.

It is important in this test that the blood be drawn rapidly by the first puncture of the vein and that the tube be cleansed with a bichromate acid mixture. A rapid estimation of the tendency toward bleeding may be made by making a puncture of the lobe of the ear or the finger tip and touching the drop of blood with a piece of filter paper at thirty seconds intervals. The size of the blood stain on the filter paper should be decreased each time and if the fifth or sixth stain is as large as the first it indicates a decreased coagulatibility. This is sufficiently accurate for most clinical work.

Increased fragility of the red cells is also of value especially for determining whether jaundice is hematogenous or hepatogenous in origin. This is easily done by mixing the blood with hypotonic salt solution and determining the strength of solution in which lakeing takes place. The normal resistance varies from .47 to 0.3. This is a very valuable test in jaundice as in haemolytic jaundice the resistence is lower than normal and in ordinary obstructive jaundice it is higher.

I realize that these few points by no means exhaust the possibilities of functional diagnosis and the surgeon can well afford to use all methods which will benefit his patient and I would suggest the following as a rational procedure.

First: All genitourinary cases should have a functional kidney test.

Second: All kidney should have a functional test of the separate urines.

Third: All jaundice cases should have the blood tested for coagulation time and hemolysis.

Fourth: All patients who are not known to be free from hemorrhagic tendencies should have coagulation time taken before an operation.

Fifth: No operative procedures on the thyroid gland should be undertaken until metabolic studies have been made.

Sixth: All obscure abdominal cases should have the advantage of the various functional tests before resorting to exploratory operation.

I am quite sure if we take advantage of these methods we will make fewer mistakes in diagnosis, will have lessened operative mortality and a greater percentage of cures in the future than we have had in the past.

THE PASSING OF THE FAMILY PHYSICIAN.*

J. Lue Sutherland, M. D., Grand Island, Nebraska.

It would seem from the present trend in affairs medical, that the good old family physician is soon to be relegated to the rear; laid upon the shelf, as it were, alongside of old books and other long since discarded bric-abrac and paraphernalia of the profession, and to exist henceforth in memory only.

While there may be several factors, or agencies, that have to do in bringing about this transformation, if it is ever to be brought about, it is the purpose of this paper to call attention to only two or three; of which specialization and group practice, while perhaps not the most important, are at the present time the most prominent in the medical eye of this country. As to the usefulness of the qualified and ethical specialist and the permanency of his functions, but little need be said. They are self evident to all. Group practice, however, is a much younger bird; not yet fully fledged in this country, but little and very imperfectly known, and perhaps less understood, by the rank and file of the profession and scarcely at all by the people to whom its services are offered, the lay public. Hence time alone can tell what the future has in store for it. But just here, lest a wrong impression obtain, the writer has neither intention nor wish to utter aspersions nor to cast a single reflection upon either this method of practice or any of the men engaged therein; on the contrary, as far as his limited knowledge permits an opinion, he is in favor of it if founded upon principles wholly void of monopoly and commercialism and conducted within proper and ethical limits, the best interests of the patient being the first consideration at all times and in all circumstances.

But, as already said, this method of practice is at present but little known; and regardless of the principles which underlie or are incorporated in its organization, what scope or fields of practice it is intended to embrace, or what to exclude, or whether it is intended to embrace everything and exclude nothing, there is one very formidable entity or condition to be reckoned with and the result known, before it will be safe to predict either the success or failure of the method; and that is the view that the general public takes of it. Should that view be unfavorable, it will react not only upon those who are thus specially interested, but also upon the entire medical profession. It is one thing to offer the people a service; their acceptance of it is quite another; and as long as so many continue to diagnose their own ills, whether real or imaginary, and to select the remedies from those advertised in the local newspapers, just so long will they be a little slow in sidetracking their trusted family physician to seek advice from a "group", however competent each individual member of it may be, when the baby is sick and ten miles in the country. Nor, is the layman's opinion in such matters at all likely to undergo a favorable change, should force of circumstances compel him at some time to accept the services of a member of a group, if the latter, before he makes any attempt to relieve the acute sufferings of the little patient, must secure specimens of the secretions, excretions, etc., and await the report of a laboratory analysis. To use the vernacular, the people will not "stand for it"; and what will be the result? Chiropractic, osteopathy, divine healing and scores of other cults, some of which are as yet unborn, will continue to reap rich harvests and the people will cheerfully "pay the freight" at so much per, in advance, and continue to have the same old opinion of us, namely, that our organizations are maintained and our meetings held for the purpose of increasing our fees.

In the March number of our State Medical Journal is an article under title of "A Reorganized State Medical Society" (1): The author says: "Two great obstacles to the progress of medicine are, first, a lack of organization in medicine, and second, the layman's lack of knowledge of the value of medicine to himself." Truer assertions would be difficult to make; especially the second, "the layman's lack of knowledge of the value of medicine to himself." Who is responsible for this lack of knowledge? The regular medical profession very largely. Our entire organization, such as it is, has ever pursued a wrong course with, and at present maintains a wrong attitude toward those whom it would serve and whose good will it desires. While ours is much more than a business, it is a business nevertheless; but as an organization it has ever been conducted in a very unbusinesslike manner. The business man makes constant effort to advise the public that he not only has "the goods" but that they have quality to recommend them, and are for sale. How is it with us? We meet in our various organizations several times each year at which we read and discuss papers, scientific, psuedo scientific and otherwise, of which the "otherwise" are but little welcome and not at all popular, and when read are listened to indifferently, if not impatiently, because forsooth, "the time of the session is too precious to be taken up with anything but the strictly scientific." The report of the transactions of our association meetings are chronicled in medical publications only and consequently, are not read by the general public. Is it any wonder that there is a lack of knowledge upon the part of the layman as to the value of real medicine to himself?

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The case of the "little talking girl" of Waukegan, Ill., is a typical illustration of the way in which the public is educated in matters pertaining to disease and its treatment. The lay press heralded its reckless daily exaggerations from coast to coast, proclaiming she had been under the care of a number of the best medical men of the State of Illinois who, having utterly failed to benefit her in any particular, she was cured within a few days by a few chiropractic adjustments of the second and fifth spinal vertebrae. It is presumed that the "adjustments" not remaining "adjusted" any longer than the "adjustor" was "adjusting" them, had to be "readjusted" several times a day as long as the "adjusting" was good. However, the disciples of this pretense lost no time in using those newspaper superlatives for advertising themselves in their respective localities throughout the length and breadth of the land. Notwithstanding the fact that the greater part of those newspaper statements were false, and that the treatments thus given not only did not relieve but aggravated the condition, and it was several days after the last one before there was any amelioration of the symptoms instead of being "as well and happy as you" as those advertisements read; nevertheless, in the minds of the laity, those false statements and resultant false advertisements are yet unchallenged and undisputed. The Journal of the A. M. A. made special effort to ascertain the facts in the case and published them in extenso; but as before stated, the general public does not read medical journals, consequently the newspapers constitute its sole source of information; and by the vast majority their statements are accepted without question. This case is only one of the countless number of similar ones of almost daily occurrence within this "fair and progressive land".

The blind faith by which the laity accepts as truth the average newspaper statement is equalled only by the avidity with which they accept the extravagant assertions and promises impossible of fulfillment, of the ignorant pretenders of the various cults. Does it not seem that we as a people in this age of broad education and general enlightenment in almost everything else, should not be so benighted and so gullible in matters which pertain to and have to do with the nation's greatest asset, the health of its citizens? And if we feel that there is room for improvement and that improvement is necessary, then is it not high time that we make some special effort to bring it about?

In comment upon the case just cited, the Journal heads an editorial thus "THE STATE FAILS". Just what is meant by the word state in this connection we will leave for each reader thereof to interpret as he sees fit; but would it not be a little more to the point to say "OUR MEDICAL ORGANIZATION FAILS"?

In looking over the published transactions of both state and national associations, we find the word "LEGISLATION" appearing with rather monotonous frequency, session after session, year in, year out, as though it was the sheet anchor by which we expect not only to limit the practice of the healing art to the competent and the worthy, but also to protect the people from the ignorant and the unworthy; but the sum total thus far amounts to just this: We have weighted our own shoulders with additional burdens without additional compensation, and have raised the standard of qualifications, for us, so high that all sorts of cults with their hoards of mushrooom disciples, have crept under and our legislators readily grant them immunity from the laws which they, at our request, have enacted for us; with the result that drugless healers, some of whom having been granted representation on the board of licensure, are now asking that their use of drugs be legalized, and patent medicine vendors flourish side by side right in our midst. Quackery in all forms and in various guises, aided and abetted by the wide publicity accorded to it by the daily press, finds just as fruitful fields today as it did half a century ago; nor did the testimonials extolling the wondrous(?) curative properties of Hostetter's Bitters and Ayer's Sarsaparilla, of that period, have anything on those of Nuxated Iron and Tanlac of today. A young man with a very ordinary common school education can absent himself for a few months, return to his home town, prefix Dr." to his name and, unrestricted, practice anything from paring corns and clipping toe nails, to pretended examinations of the eyes of school children, and at once be accorded the confidence and patronage of those same "dear people" for whose enlightenment and protection we have been invoking legislation for the last half century.

But, some may be wondering, "what has all this to do with the Passing of the Family Physician?" Just this: So long as our medical organizations persist in this accomplish nothing policy in educating the public in matters it should know and know aright before we can hope that it will change its attitude and take a more rational view of rational medicine, it is incumbent upon the individual members of the profession in their daily walks and ministrations among the people, to supply this education.

And who is more competent, or has greater opportunities for this work than the faithful, and trusted family physician? He it is who occupies the greatest space in, and has the strongest hold upon the hearts of his clientele, not excepting ministers of the gospel, Hence, he it is who must build up this education in the homes, and impart it directly to the individual members of every family, even if he does not always carry with him a supply of sterile cotton swabs and a nest of test tubes; nor always deem it necessary to scrutinize his patient through the "little end of a microscope", as Uncle Allan used to say in his lectures in "old Rush", nor before daring to institute measures for the relief of the acute suffering of his patient must await a laboratory report as to the pathology.

In short we are not quite ready to throw aside common sense in the practice of medicine; nor are we any nearer ready to accept the average layman's ideas that our profession is limited to just two things, viz., surgery and the prescribing of drugs to pour down our patients' throats. Until the people are so educated that they can and will intelligently discriminate between the true and the false, and no longer blindly accept the extravagant, absurd and impossible claims of ignorant pretenders, the quacks and charlatans under whatsoever guise, and by whatsoever name or cult, just so long will both we and the people have need of "Weelum MacClure," the general practitioner and family physician, in every land beneath the sun. Nor shall his functions be limited to simple attendance upon the sick and the physically abnormal, but in addition let it be delegated to him wherever he goes, to impart a real knowledge as to the true meaning of the word MEDICINE. Hence the day for the passing of the family physician has not yet arrived.

DISCUSSION.

Dr. N. H. Blakely, Lincoln.—I believe if a paper like this were published in every county of the State of Nebraska, it would help to rid us of a lot of our troubles in our practice.

Dr. A. R. Downing, Merna.—I think the paper was very good and very much in place. The doctor spoke about the raising of the requirements for physicians. I believe that has been one of the greatest things that has ever come to our profession. When I first commenced practising medicine, about the time Dr. Sutherland did, in almost every locality you could find a doctor as tricky and as slippery as an eel. This has ruled him out. Now we do not have him, but chiropractors and osteopaths are more inviting to him, and he has gone in there and left the medical profession, extremely to our credit.

REPORT OF FEMALE INFANT WITH DOUBLE INGUINAL HERNIA, PROLAPSED TUBE AND OVARY IN THE LEFT SIDE—OPERATION—RECOVERY—WITH REVIEW OF CURRENT LITERATURE AND REFERENCE TO THE FOETAL DEVELOPMENT OF PELVIC ORGANS.

H. M. McClanahan, A. M., M. D., F. A. C. P., Omaha.

HISTORY.

Parents well. Mother a primipara. Pregnancy normal. Labor uneventful. Said to be full term. Birth weight 4 pounds. Born Jan. 14, 1921. No new born diseases. Nursed at the breast for six weeks, then because it was fretful it was placed upon a modified milk formula. Constantly suffered from indigestion, colic, and cried much of the time. When the infant was five weeks old, the mother observed a swelling in the right groin and the following day a similar swelling in the left groin. A physician was called who made a diagnosis of double inguinal hernia, and demonstrated to the mother how to reduce them. A few days later a competent graduate nurse was called in. She, also, confirmed the diagnosis of double inguinal hernia. She was present in the office at the time of my examination and stated to me that when the infant cried the herniae promptly appeared in both groins and that they were easily reduced. There was no round mass in the left hernia at this time. She also taught the mother how to apply the hank yarn truss. During the next four weeks the mother stated that masses would frequently come down when the baby cried, but she could always readily reduce them. On March 30th when she was replacing them, she discovered a small round mass in the left groin that could not be reduced. That night the infant cried nearly all the time, evidently in great pain, and vomited a number of times. During the next three days the swelling gradually grew larger, though frequent attempts were made to reduce it. These failing, the parents brought the infant to my office on April 2, 1921.

EXAMINATION.

Female infant, weight 6½ pounds. Quite thin. Head 14½ inches, chest 14 inches, length 21 inches. Skin soft and free from any eruption. Osseous and glandular systems normal. Heart and lungs normal. Tongue and mouth normal. Abdomen slightly distended. As the infant cried during the examination, a distinct hernial mass appeared in the right groin. This was easily reduced with a gurgling sound. In the left groin there was a round mass, slightly moveable in all directions, giving a distinct sense of fluctuation; evidently painful to the touch, but under careful taxis irreducible. There was no evidence of intestine in the mass. Not being certain in my own mind as to the nature of this mass, but being satisfied there had been a hernia on this side, and a hernia still present on the right side, I advised a prompt operation. The infant was taken at once to the Methodist Hospital and operation performed by Dr. C. R. Kennedy. His report follows:

> "Infant given a general anesthetic. On making the usual hernia incision, a thin walled sac was exposed. On opening this a quantity of serum escaped. Upon enlarging the incision, the sac was found to contain the Fallopian tube and ovary. The ovary was dark, almost purple, but apparently not strangulated. Tube appeared somewhat swollen. Hot packs were applied for a few minutes. The internal ring dilated, and tube and ovary returned to the abdominal cavity. The hernial sac was removed and canal closed in the usual manner. The round ligament was not discovered during the operation."

The infant was put to bed and rallied very promptly. The following day the temperature was 102°, the bowels moved freely, and the kidneys acted. Temperature subsided on the third day. Infant placed on a modified milk formula. The wound healed very kindly, and the child left the hospital April 15th. The infant's condition—in the opinion of Dr. Kennedy and the writer—did not warrant a double operation. Before leaving the hospital a proper truss was applied to the right side. The writer has been regularly informed since the mother's return home. The last report received was May 21st. The infant has steadily gained in weight. No evidence of any recurrence in the left side. Truss retains hernia of right side nicely. As is well known hernia in the female infant is extremely rare as compared to hernia in the male. This is due to anatomic differences in the two sexes.

Dr. Poynter, Professor of Anatomy, Medical Department, University of Nebraska, has kindly epitomized the development of the inguinal region in the female.

"In both sexes quite early in uterine life a bridge is established between the urogenital fold and the inguinal region through the inguinal fold and the crista inguinalis. In the interior of the crista there is formed a compact cord of mesenchyme of considerable length. In the more extended discussions this cord is recognized as made up of two. The one in the inguinal region being called the gubernacular cord and the second, extending from the gubernaculum outward to the genital tubercle, the scrotal ligament. In the male the cord and the ligamentum scroti make up the so called gubernaculum testis, in the female the homologus structures are called the round ligament and the ligamentum labiale. The male shows a union of the gubernaculum with the mesonephric fold opposite the insertion of the ligamentum testis at which point a connection is established between the gubernaculum and the ligamentum testis so that there is a continuous cord from the testis to the genital tubercle. In the female the connection of the ligamentum ovarii, homologue of the ligamentum testis, and the round ligament is not possible because of the intervention of the uterine wall, so that both insert into the uterus. The saccus vaginalis which becomes the parietal tunica vaginalis of the male is a more or less incomplete development in the female. Generally it vanishes completely but occasionally persists as the diverticulum or canal of Nuck. In the cases where the ovary is found in the diverticulum of Nuck it is probable that there is an early developmental perversion by which the ligamentum ovarii and the round ligament become connected instead of inserting on the uterus and the ovary then is free to follow the same course as the testicle does in its descent."

SUMMARY OF RECENT CURRENT LITERATURE.

The most comprehensive article is by Dr. Aime Paul Heineck of Chicago, Ill., found in Vol. 15, 1912, Surgery, Gynecology and Obstetrics. Title: Hernias of the Ovary, of the Fallopian Tube, and of the Ovary and Fallopian Tube. Review of all undoubted cases from 1890 to 1910 inclusive. The author states that he has very carefully searched the English, French, and American literature and has only included cases proven either by operation or at autopsy. His report comprises a total of 142 cases. Of these 67 were under one year of age. The youngest case reported was 22 days old.

12 were from 1 to 15 years.
25 were from 15 to 30 years.
38 were from 30 to 70 years.

In this article many of the adult cases dated back for a number of years. There are reports of cases of hernia of the ovary alone, of the Fallopian tube; of the ovary and Fallopian tube; of the ovary, Fallopian tube and intestine; of the ovary, Fallopian tube and uterus; of the ovary, Fallopian tube and portion of the bladder.

In an article by Dr. Charles Abelio of Chicago, Ill., there was a report of a case of hernia of the Fallopian tube, ovary, and intestine in an infant three months old. This author said that he found from 1910 to 1916 a total of 9 cases in the American and foreign literature, in infants; the author's case making 10. Since 1916 we have consulted the Index Medicus and have found a report of 4 undoubted cases in infants. Dr. J. E. Summers of Omaha—a skilled surgeon of long experience—has recited two cases to me that he had not reported in literature; making a total of 83 cases. No doubt many similar cases have not been reported or have been overlooked.

Of the 67 cases in Dr. Heineck's report there were five deaths and 62 recoveries. In 63 of the cases the tube or ovary or both, were removed and only four were reduced. The history of many of these cases is very similar to that of the writer's case. For example:

Dr. E. B. Hodges, Annals of Surgery, Vol. 44, 1916, reports a case in an infant 2 months old. Two weeks before admission infant vomited frequently. Its condition was fairly good. Examination revealed a hard mass. At operation: Swollen dislocated ovary and tube. Ovary and tube tied off. Convalescence normal.

U. M. Rigby, London Lancet, 1905, Vol. 2, Page 36. Infant aged 3 months. Lump observed day before admission. Very painful. Gradually increased in size. Irreducible. Operation. Contents: Tube and congested strangulated ovary twisted on its pedicle. Both tied off and removed. Convalescence uneventful.

Robert Campbell, British Medical Journal, 1905, Page 1206, reports three cases in infants. Tube and ovary in two, and tube and ovary with uterus and bladder in one. Author states that strangulation is due to torsion and not to constriction.

CONCLUSIONS.

In the writer's case the history is definite that there had been an intestinal hernia of the left side preceding the descent of the tube and ovary, and that the ovary and tube had been in the inguinal canal for four days. The uncomplicated convalescence following operation and replacement is evidence that the vitality of the ovary was not destroyed.

A careful study of the reported cases reveals the fact that strangulation is due to torsion and not to constriction at the internal ring. One case is quoted where the tumor had only been present for two days, yet the ovary was strangulated.

If the tube and ovary are to be saved, it follows that early diagnosis and prompt operation are necessary.

In those cases where the ovary can be reduced, the probability is that it will later prolapse, hence, an early operation is the better and safer treatment.

A study of the history of the cases of hernia of the tube and ovary in adults reveals the fact that many of them had existed for a number of years.

From a study of the histories and a reference to the embryological development of the female pelvis, it is probable that all cases of hernia of the ovary and tube are due to congenital defect, even in cases where the hernia does not appear until later in life.

The writer has made a fairly careful search of the modern text books. In some no reference is made to this subject at all, and but scant mention in any work that has come under his observation.

The author wishes to acknowledge his indebtedness to Miss Churchill—a senior student—for valuable aid in searching the literature on this subject.

A PLEA FOR MORE CAREFULLY PLANNED TONSILLECTOMIES.

C. G. Baird, M. D., Beatrice, Neb.

A tonsillectomy is first and always a hospital operation. Every case should be prepared as carefully as for any other major operation. Needless to say the proper operating room equipment is second only to the skill of the operator for successful results. Few operators in the past have studied their cases with the thought that each case or rather each individual tonsil represents a definite surgical problem. The time is past when they are willing to stake their surgical reputations on one operative technique. The successful surgeon of today has all or at least a great variety of the different instruments at hand. He selects the one best suited to the individual tonsil to be removed. His cases are carefully studied, each tonsil separately, and in this way he is able to select from the various instruments the ones best suited to the case.

In a case where the tonsils are large and firm, the pillars not adherent to the tonsil, and the tonsil is freely movable in the throat, he may select a Sluder guillotine, or one of the ring-snare instruments, devised for the Sluder or modified Sluder operation and feel reasonably certain of excellent results. The pressure necessary to force the tonsil through the fenestra of the instrument is slight. The anterior pillar is not bruised during the removal of the tonsil. There is no delay in the healing. No infection takes place, the scar tissue following the healing is negligible. The result is all that can be desired. In fact the end result is so perfect, it is apt to make an enthusiast of the operator, for one of these so-called quick and easy methods.

Operating by the above method, on tonsils that are large and firm, with the pillars very adherent and the tonsil not freely movable in the throat, will give a less perfect result. The tonsil in this case is forced through the fenestra of the instrument with difficulty. During this phase of the operation, the pressure used is sufficient to bruise the anterior pillar severely. It becomes more susceptible to infection which usually takes place and later the pillar sloughs away. When healing takes place, the area will be contracted by scar tissue. This unlooked for end result presents an all too familiar picture. Yet a superficial examination failed to show any difference in the two cases. A more careful examination would have revealed the adherent pillars. A little time spent before the operation would show if the tonsils were freely movable in the throat. Even after the application of the instrument, the operator should not hesitate to change the method if he finds that pressure is necessary to force the tonsil through the fenestra of the instrument. The necessary instruments for a dissection should always be on the instrument table. If the operator's armamentarium includes only one set of instruments and one method, then he must select his cases to suit his instruments, as he cannot select the instruments to suit the individual case.

I do not wish to give the impression that a man must have every known kind of tonsil instrument, although, most of them have their good points. All the tonsil instruments known to the profession cannot take the place of surgical skill. Too many makers of instruments would have us believe skill is a secondary consideration. I do wish to give the impression that perfect end results are obtained only when we give the attention to a tonsillectomy it deserves. A perfect tonsillectomy should remove nothing but the tonsil and its capsule, and should be accomplished with the minimum of injury to the adjacent structures. Any undue pressure, or manipulation causes more postoperative discomfort to the patient, if not more serious complications.

My method of examination differs perhaps but little from that of the average operator. I will give it briefly.

1. A careful history of the patient.

2. General appearance.
3. Careful heart and lung examination and urine analysis.
4. A thorough examination of the ears, nose and throat. I look for adherent pillars, old scars, diseased crypts, the lingual tonsil and other lymphoid tissue. If the tonsils are freely movable in the throat, firm or friable. During this examination I intentionally cause some part of the throat to bleed, if the patient has a tendency to hemophilia it should be noted.

Sometime after operation, patients with deformed chests or incorrect habits of breathing are put on regular breathing exercises. As all of these cases vary from the normal I modify this examination to suit the individual case.

A careful examination and history of each case before and after operation, if studied with the view to end results will make us approach our future tonsillectomies with all the reverence we have for any other major operation.

SOME PRACTICAL POINTS ABOUT THE TONSILS.*

James C. Tucker, M. D., Omaha, Neb.

There is perhaps no subject in medicine which has of late years received more attention from the clinician and the specialist than that of tonsils. Certainly there is much more to be learned on the subject. As the primary source of focal infection, the tonsil has been more carefully investigated than any other organ of the body, possibly because of its diverse pathology and its accessibility for examination and treatment. During the past two or three years, however, there has been a reaction from some quarters against so much tonsil surgery, but it is not in the province of this paper to discuss the wisdom of that attitude. I know of no more difficult task for the laryngologist than to pronounce a tonsil normal and of no pathological significance and then to prove his statement. Several times in my own experience I have pronounced the tonsils innocent of causing a certain disease or train of symptoms, while later on the removal of the tonsils, without other treatment, has resulted in a complete amelioration of symptoms, which is about as good clinical evidence of a cure as we have.

Let us consider the practical everyday method of examining the tonsils, and the indications for tonsillectomy. No examination of the tonsils is complete without a history, inquiring into the following points:

1. Sore throat, frequency and severity of attacks
2. History of joint trouble
3. Middle ear disease, recent or remote
4. Involvement of cervical glands
5. Relation of attacks of sore throat to any other systemic disturbances.

As to the direct examination of the tonsil: A good light is essential and reflected light preferable. Notice, first, the size and relative position, whether embedded or projecting into the pharynx and obstructing respiration and efforts at phonation; second, the symmetry of the two sides, and third, whether or not the tonsils and anterior pillars are inflamed; fourth, look for exudate on tonsils and pharynx and notice the condition of the crypts. The crypts may be open or may be closed and sealed over with exudate or scar tissue, a condition so often found in chronically diseased tonsils, and even when the patient insists he has never had sore throat. Sixth, depressing the tongue with a tongue blade, take another tongue blade and make pressure upward and outward over the upper part of the anterior pillar and tonsil. This will rotate the organ toward the median line of the pharynx and cause it to face anteriorly. This pressure will also express any secretion in the tonsil with open crypts, which may be mucous, caseous plugs, detritus, serous fluid or pus, or any combination of these. By the above maneuver most submerged tonsils will be brought into view. Seventh, palpate the upper anterior cervical glands to determine any enlargement, as the lymphatic drainage of the tonsils is to the upper anterior cervical group of glands. Eighth, take a smear or culture if desired. A trans-illuminator lamp has been devised and advocated to illuminate the upper pole of the tonsil, but I can see no practical advantage in this as the organs are so accessible to examination by direct vision.

Now, let us consider the indications for tonsillectomy:

1. Any hypertrophy which interferes with respiration night or day.
2. History of repeated attacks of tonsillitis.

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*Read before The Elkhorn Valley Medical Society, Fremont, Nebraska, January 13, 1921.

3. History of peritonsillar abscess.
4. Any threatened alteration of the voice or articulation in young children.
5. Chronic lacunar tonsillitis with any collection of pus or caseous material in the supratonsillar fossa or between the pillars and tonsils.
6. Eustachian catarrh, or the presence of any catarrhal or acute middle ear disease. This is one of the indications laid down by Sir Sinclair Thomson, and I think one which is more impressed on us as we see more ear cases. It goes almost without saying, however, that its greatest importance is in the case of young children, because most otitis media has its origin in childhood.
7. Acute rheumatic fever in young people, or endocarditis following tonsillitis.
8. Attacks due to septic absorption through the tonsils, or a chronic condition of ill health, which may be attributed to infection through the tonsillar area.
9. Gum infection and rapid decay of the teeth in young people, where enamel disease due to constitutional causes can be ruled out.
10. Any disturbance of metabolism which may be due to infected and diseased tonsils.
11. Any articular disturbance where no more apparent cause can be found.
12. Anemia, chorea or chlorosis in young people. The tonsil history and findings should always be given consideration in these cases.
13. Any arrest of physical development in young children.
14. If adenoids are present and are to be removed, the opportunity of the anesthetic should be utilized and the tonsils removed, in children over three years of age, as it is quite generally conceded that at this age the function of the tonsil as a blood forming organ has been fulfilled.
15. Cough or bronchial affections. These conditions are much more often caused by tonsils than is generally recognized. The cases are more apt to be found in children with hypertrophied tonsils, but they occur often enough in adults having rather small but irritable tonsils to justify suspicion of the tonsils as a very probable cause of the cough. Very often in adults, the lingual, rather than the pharyngeal tonsil is the offender.

It can be stated as a general rule that up to thirty years of age the tonsil is by far the most frequent primary source of focal infection, from thirty to fifty years of age, infection of the nasal accessory sinuses is an increasingly frequent source; and after fifty years of age infections of the teeth must be given serious consideration. Of course, this is a broad rule with many exceptions. As the absolute indications for tonsil surgery are not many and the more or less hopeful or theoretical ones are somewhat numerous, in a great many cases, we base our judgment on previous similar cases in our own experience, or on reports from the literature, and are obliged to advise removal of the tonsils.

As an example of theoretical rather than convincing indications for tonsillectomy, I wish to present reports of two cases:

Case 1—B. A., age 8, seen at various periods from 1912 to 1914 for repeated attacks of nausea and vomiting with abdominal distress. Attacks recurred about every six weeks and lasted from twenty-four to seventy-two hours with patient retching and vomiting. Family and personal history negative. Attacks recurred in spite of any diet or medicinal treatment given. Patient was a robust and well developed boy. Tonsils were moderately hypertrophied with a small amount of central adenoids. He had had mild attacks of sore throat but never severe enough to confine him to bed or to keep him from school. In July 1914, I removed his tonsils and adenoids and he has never had an attack of nausea and vomiting since.

Case 2—M. S., a robust well developed girl of twelve years of age. Had tonsillotomy (tonsils clipped) a few years before coming under my care. I saw her two or three times a year from 1912 to 1916 for attacks similar to those described in Case 1. I also treated her several times during this period for acute tonsillitis and advised a tonsillectomy on account of repeated infections of the tonsillar stumps. During my absence in 1917, her tonsils were removed by another surgeon, and she has had no recurrence of abdominal attacks since the operation.

I have seen a few other cases with similar histories and while a few cases prove nothing, I present them for your discussion.

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CLINICAL SYNDROMES IN SEROUS MENINGITIS FOLLOWING INFECTIOUS DISEASES.*

G. Alexander Young, M. D., Omaha, Nebraska.

Since Quincke ⁽¹⁾ in 1893 called attention to a syndrome which he called serous meningitis, a number of authors have published case histories presenting the signs of an acutely developing increased intracranial pressure with marked cerebral symptoms, suggesting in some cases meningitis, in others hydrocephalus, and in still others brain tumor. The clinical picture includes characteristically headache, choked disc, loss of vision, cerebellar vertigo and incoordination, and paralytic conditions with pathological reflexes that vary from time to time in extent and location.

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Oppenheim (2) in his chapter on acquired hydrocephalus refers to Quincke's contention that a serous meningitis of the ventricles is often the cause of an internal hydrocephalus, and later on says "a definite diagnosis is often impossible until a late stage of the disease, as this acute acquired hydrocephalus or acute serous meningitis (mark the association of names) may terminate in a few weeks or months in complete or incomplete recovery."

Ziehen (3) in his Handbook of Nervous Diseases of Childhood devotes a chapter to leptomeningitis serosa and includes with it the conception of an acute acquired hydrocephalus of inflammatory origin.

Boenninghaus (4) in 1897 in a monograph on meningitis serosa acuta based on 28 cases, suggests that in acutely developing serous meningitis there may be on account of the excess of fluid in the ventricles, a displacement of the aqueduct of Sylvius and a resulting acute internal hydrocephalus.

Bonhoeffer (5) in Lewandowsky's Handbook of Nervous Diseases, divides acute acquired hydrocephalus into two forms; one with acute febrile onset or serous meningitis and the other, afebrile, with a subacute or chronic course and a clinical picture of brain tumor.

Reichardt (6) in 1911 emphasized the fact that in a number of cases previously thought to be associated with serous meningitis a condition of "brain swelling" was present, in which the brain weight and volume, owing to a parenchymatous edema had become excessive, resulting in an increased intracranial pressure and increased spinal fluid pressure. This so called brain swelling or edema not infrequently may follow infectious diseases as was emphasized recently by Sharpe (7).

Gowers (8), in his text book, describes a condition of acute hydrocephalus which he asserts is always due to meningitis, which however, may be limited to the ventricles.

All authorities agree that besides the infectious diseases, adjacent localized suppurative processes, sinus disease, trauma and alcoholism may result in the same symptom complex of excessive cerebro spinal fluid or of cerebral oedema with concomitant symptoms of cerebral compression, but it remains true that infectious diseases such as pneumonia, typhoid, measles, whooping cough, etc., constitute a frequent cause of this condition.

As one goes through the literature covering the subject of serous meningitis, acute acquired hydrocephalus, pseudo tumor or brain oedema, one is confronted with the fact of how little we really know of the physiology of the cerebro spinal fluid and of the fluid interchange of the brain. This being so it seems worth while to review briefly some of the recent literature on the cerebro spinal fluid and on the absorption of the tissue fluid of the brain.

Halliburton (9) in "Brain" 1916 describes the cerebro spinal fluid as a clear watery fluid of low specific gravity, containing a trace of proteid and of glucose and with an inorganic salt content similar to that of blood plasma. He compares it to Locke's modification of Ringer's solution. It is not to be considered the same as the lymph. He, in common with most investigators, Mott (10), Cushing (11), Weed (12) and Dandy (13) consider that it is in great part a secretion of the choroid plexuses, receiving an addition from the tissue spaces of the brain and spinal cord by way of the perivascular spaces. Dixon and Halliburton believe that it may be secreted in the dog at the rate of 6 cc. per hour, though this opinion has been criticized sharply by Becht (14). The total quantity in the human adult normally amounts to 120 to 150 cc.

Weed, in his study of the cerebro spinal fluid in 1914, states that the fluid is secreted by the choroid plexuses, passes out through the aqueduct of Sylvius and the foramina of Majendi and Luschka to the basal cisterns of the subarachnoid space and from there outward to the spinal arachnoid and to the cerebral arachnoid. He believes it is absorbed by way of the arachnoidal villi leading to the venous sinuses of the dura.

Dandy (13) holds a similar view as to its origin but believes it is absorbed by the subarachnoidal space covering the entire cerebral cortex. Weed, Dandy, Halliburton and Dixon believe that the cerebro spinal fluid pressure is equivalent to the secretory pressure of the plexuses and that it generally exceeds the venous pressure. The foregoing authors emphasize the secretory origin of the fluid and the conception of an arachnoidal circulation of the fluid. The rate of flow is unknown.

Becht (14) in the American Journal of Physiology 1920 in an exhaustive series of experiments on dogs opposes these two conceptions in that he could find no evidence that the cerebro spinal fluid is a secretion and states that its pressure is determined by the venous pressure and varies proportionately with it.

The brain contains no lymph vessels. Their place is taken by the subarachnoid circulatory apparatus whose finer ramifications as determined by Mott and by Weed consist of perineuronal, pericapillary, and perivascular spaces (Robin Virchow) leading to the subarachnoidal spaces of the arachnoid. The tissue fluid of the cerebro spinal axis normally passes by these channels to the absorption areas of the cortical arachnoid.

PATHOLOGY.

The pathology of these cases of serous meningitis is uncertain owing to our lack of exact knowledge as to the physiology. They rarely come to autopsy. The supposition that the excess of fluid is of an inflammatory origin, that may come from the ependyma of the ventricles, from the choroid plexuses or from the meninges seems to me to be the most tenable. What serious lesions of the meninges may occur without apparent clinical symptoms is well seen in a case recently reporty by Dandy where a young man four months after an attack of measles, in which no evidence of cerebral complications were noticed, developed severe headache, choked disc and symptoms of cerebellar compression. Operation following a diagnosis of cerebellar tumor, revealed a meningeal cicatrix blocking the exit of the foramina of Majendi and Luschka producing thereby an obstructive hydrocephalus. The meningitic process resulting in the scar formation had run its course with but little or no evidence clinically.

Whether the excess of fluid is due to increased production or diminished absorption or both together and both due in some way to a mild intracranial inflammatory process, we are unable definitely to say. One cannot help but entertain the idea that an arachnoidal stasis may result from a rapid increase in production, because of the permanent relief obtained often from a single lumbar puncture.

SYMPTOMS AND COURSE.

The symptoms produced, as noted in the beginning of the paper, are all due to the increased intracranial pressure which may at times be unequally distributed, causing false signs of localization. They may develop acutely in a few days or progressively through a course of several weeks or months and if not relieved may in some cases lead to death from meduallary compression. The chief danger in the nonfatal cases is that of blindness from choked discs, which is especially to be feared in the young. It is to be noted that children are particularly subject to this ailment.

DIFFERENTIAL DIAGNOSIS.

Serous meningitis must be differentiated from acute meningitis, encephalitis, and brain abscess, and in the more chronic cases from obstructive hydrocephalus and brain tumor.

It may be distinguished from acute meningitis by the greater febrile reaction and by the leucocytosis in the blood and spinal fluid found in meningitis; from brain abscess by the presence in the latter, of a septic focus, and the evidence of a localized process in the brain.

In the chronic forms of serous meningitis, or as I think they may be better called, brain oedema, the diagnosis from hydrocephalus may be practically impossible unless a ventriculogram by Dandy's method be employed.

From brain tumor without localizing symptoms the diagnosis may be extremely difficult and may be made only by the progressiveness of the brain tumor syndrome and the improvement of the oedema syndrome under treatment.

TREATMENT.

Quincke in his communications recommends the use of mercurial inunctions. He also advocated the use of lumbar puncture and this today remains our most convenient and most effective treatment. Lumbar puncture should be used guardedly in cases where the intracranial pressure is high.

The patient should always be in a horizontal position with the head lower than the feet and the fluid should be withdrawn slowly. Sometimes we may find the spinal pressure practically nil, owing to blocking of the foramen magnum by the cerebellum and medulla. Here, a simple measure suggested to me by Dr. Cutter may serve, to-wit: elevating the foot of the bed and depressing the patient's head. This releases the foraminal obstruction and the fluid will flow freely. The amount to be withdrawn varies from 1 cc. to 30 cc. The smaller amounts seem at times to be of as much aid as the larger. Where the lumbar puncture does not relieve, where blindness is imminent or where the symptoms seem to indicate an obstruction of the aqueduct of Sylvius or of the foramina of the fourth ventricle, puncture of the lateral ventricles or of the corpus callosum may be carried out. This procedure does not carry the danger of sundden death that is ascribed by many to lumbar puncture in cases of high intracranial pressure.

I have seen cases where the syndrome of serous meningitis has been apparently due to focal infection in teeth or tonsils and where removal of the foci has resulted in recovery.

The use of thyroid extract has seemed to be of aid in one case to be quoted. The use of intravenous injection of 30% sol. NaC1 to reduce cerebral oedema is to be kept in mind in some of these cases. Careful attention to the technique given by Weed (15) is most necessary.

In illustration of the foregoing remarks, I wish to quote three cases:

Case 1.—K. V., boy, age 4½ years, was seen with Dr. Rork of Oxford, Neb., August 8, 1915. Dr. Rork stated he had first seen the child June 14, 1915, when he was found to be suffering from whooping cough and a pneumonic process in the right lower lung. He recovered from this condition in a short time. July 30, 1915, he was seen again by Dr. Rork with a history of stiff and painful neck of ten days duration and vomiting. By August 4th his eyes had become prominent, pupils dilated and his vision had failed. At my examination Aug. 8th he was stuporous, eyes prominent, pupils dilated, choked disc, four diopters swelling, right and left, retracted neck, absent knee jerks and a moderate Kernig sign. He seemed completely blind, temperature 97, pulse 60. Lumbar puncture showed a clear fluid under excessive pressure. Ten cc. were withdrawn.

Two days later condition was materially better, neck rigidity was absent, eye balls had receded, vision perhaps improved.

Aug. 15, choked discs right 2 D; left 3 D; ten cc. spinal fluid withdrawn. Aug. 16, Kernig sign present both sides, temperature 99, pulse 102. Urine normal. Vision no better. He went to Omaha and was received at Clarkson Hospital Aug. 18th and on the 20th Dr. Wightman made a puncture of the corpus callosum, withdrawing 45 cc. of fluid.

Previous to the operation the fundus showed 5 D swelling right and left with complete blindness. There were no untoward results from the operation and the patient returned home Aug. 29. Septh. 4th, six days later, Dr. Rork reported the child happy and playing with other children freely. Discs right 2 D and left 3½ D. Pupils responded rapidly to light. Is taking thyroid gr. 1/5 t.i.d.

Sept. 8th, right disc 1 D, left 2 D swelling. Can distinguish black from white, runs about the house playing with a hoop.

Jan. 23, 1916, four months later, vision is moderately good but not clear. General condition good. April 5, 1921, five years later, patient now ten years old, of robust appearance. At ordinary reading distance can see clearly with right eye, with left can see large print. Is in the 4th grade at school. Can be considered as a recovery with moderate visual defect.

Case 2.—F. H., boy, age 8 years, referred by Dr. Allenberger of Columbus, Neb., Dec. 13, 1920. Complains of blindness since Sept. 1920 and headache. He has a very large head with which he is said to have been born. Has been healthy until July 1920 when he contracted whooping cough which ran an ordinary six weeks course. August 28, 1920, began to complain of impaired vision and presented a slight right sided facial paralysis. Loss of vision became absolute by the end of September. About this time they saw Dr. Gifford who advised lumbar puncture. This, however, was not permitted by the parents. Ophthalmoscopic examination in September showed bilateral choked disc and multiple hemorrhages in both retinae and discs.

Examination Dec. 13th showed negative neurological findings except for the bilateral choke of 5 D, right and left, with marked atrophy of the swollen discs. Lumbar puncture showed only moderate pressure but was followed by intense headache lasting eighteen hours. The spinal fluid was clear, contained no cells and showed a negative Wassermann reaction.

Because of the severe headache occurring immediately after the lumbar puncture it was thought best to relieve the intracranial pressure by puncture of the corpus callosum. This was done and was followed by a gradual subsidence of the choked discs during the following six weeks. The boy reported at the end of this time that he could distinguish the position of the sun in the sky but otherwise vision was unchanged.

Mar. 1, 1921. Dr. Patton reported right disc fuzzy with an elevation of two diopters and the left quite flat. Both were completely atrophic.

April 5th, 1921. Still blind. Reports feeling well up to two days ago when after drinking ice water he vomited and had severe headache for twenty four hours. Disc no change. The question of a possible obstructive hydrocephalus temporarily relieved by the callosal puncture has to be considered. If further symptoms should develop a ventriculogram would be indicated.

Result. Relief of headache, vision not improved owing to delay in operative treatment. These two cases show how necessary it is to inaugurate operative treatment the moment vision fails.

Case 3.—Mrs. K. F., age 27, married, no children, 2 miscarriages, referred by Dr. Owen, Omaha, May 15, 1919.

Complained of impaired vision headache, vertigo, tinnitus, unsteady gait, paraesthesia on left side of face and left hand.

The patient stated her symptoms had commenced one month previously with severe headache and vomiting, much pain in the back of the neck. Says she was delirious for two weeks. Two weeks ago lost vision in her left eye and noticed the paraesthesias in the left side of her face and left hand. The vision of the left eye returned in a few days. Three or four days ago the vision of her right eye became impaired.

Family history negative. Previous history negative except for miscarriages and that she had always been a nervous type of woman. Neurologically she presented double choked discs, nystagmus on left lateral gaze. Adiadochokinesis and ataxia of left hand, and markedly diminished knee jerk and ankle jerk on left side. Plantar reflexes both flexor.

Lumbar puncture showed intense pressure of spinal fluid, it spurting out of needle and after needle was withdrawn the fluid continued to seep from the skin puncture.

The spinal fluid contained two cells per cu. mm. with no globulin. Negative Lange reaction, negative Wassermann test and negative blood Wassermann reaction. Skiagrams of the sinuses were negative, but the teeth showed several abscesses, which were removed. Leucocytosis absent. On the basis of the acute onset, severe continuous headache, choked discs, marked cerebro spinal fluid pressure without cellular or proteid content indicating an inflammatory reaction, negative Wassermann reaction, a tentative diagnosis of serous meningitis was made, although the possibilities of cerebellar tumor or acute multiple sclerosis or encephalitis were seriously considered. Following two more lumbar punctures several days apart she made a rapid recovery and is today in good health with normal vision.

DISCUSSION.

Dr. H. A. Wigton, Omaha: This subject has been comprehensively and at the same time concisely presented. We should all take an interest in a disorder which may be more common than we think.

I believe the essential thing we should take with us is, as Dr. Young emphasized, prompt action by operative procedure to relieve the pressure before too much damage has been done.

As we consider the two principal forms of serous meningitis, let us keep in mind that early spinal puncture is essential in the acute form, in which the meningitic symptoms are pronounced, and, that the opthalmoscope should be used repeatedly in determining increased intracranial pressure in the chronic type wherein the symptoms of tumor are prominent.

I believe also a spinal puncture should be done in those severe pneumonia cases showing meningeal involvement. The relief from pressure symptoms and information derived from a study of the fluid would warrant this procedure.

Serous meningitis may be confused with the benign stupors manifested in early insanities. I know of one case in particular diagnosed "Serous Meningitis" by a competent physician, which later proved to be the first of several attacks of a manic-depressive psychosis. In this connection I would like to mention favorably a book soon to be published, "Benign Stupors" by August Hoch, who was formerly head of the Psychiatric Institute of New York City.

This book by Dr. Hoch undoubtedly will be of considerable value to those who are interested in mental disorders.

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METHYL ALCOHOL POISONING.*

Francis W. Heagey, M. D., Omaha, Nebraska.

The increasing number of cases of methyl or wood alcohol poisoning makes a better understanding of its symptomatology and pathology imperative. A carpenter, thirty six years old, was admitted to the medical service of Dr. A. D. Dunn at St. Joseph's Hospital, November 14th, 1920, complaining of headache, vomiting and abdominal pain which had lasted five days. He had been drinking freely of home brew and indifferent whiskey for about two weeks. Five days prior to admission he had taken approximately twelve ounces of wood alcohol. Collapse followed at once. He was treated for three days for delirium tremens and then transferred to the hospital. In addition to the above complaints there were severe chills, dyspnea, muscular cramps and weakness. He had lost twenty pounds in two weeks.

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*Read before the Omaha-Douglas County Medical Society, May 10, 1921.

On admission, the patient was a well developed male who looked sick but was in full possession of his faculties. He was nervous. There was a marked tremor of the extremities and a slight degree of cyanosis. There were frequent contractions of arm and leg muscles. The voice was husky. There were no cranial nerve disturbances. There was no disturbance of vision but the ophthalmoscope showed some congestion of the retinal vessels. The heart rate was 120, with some impurity of the first sound at the apex, and an increased second sound over the aortic area. There was marked tenderness over the epigastrium with general abdominal rigidity. The deep reflexes and sensations were normal. The temperature was 97.6° F. and the respirations were 18 on admission.

COURSE.

For the entire six days of his stay in the hospital the patient suffered almost continuously with nausea, vomiting and diarrhea which it was impossible to relieve. There were convulsive movements of the extremities. Pallor and weakness gradually crept over the patient who was keenly alive to his suffering. The temperature was subnormal, the pulse remained between 90 and 120, respirations averaged 20. Twenty four hours before death and eleven days after taking the methyl alcohol the patient complained of dimness of vision. The fundi oculorum showed little change except slight retinal congestion and some loss of sharpness of the disc outlines.

LABORATORY FINDINGS.

The blood showed nothing abnormal except a leukocyte count of 16,400, 76% being polynuclears. The systolic blood pressure was 140, the diastolic, 100. The urine on admission was alkaline and contained some albumin, pus cells, and epithelium. The 24 hour amount, small at first, gradually became less until there was a complete urinary suppression for twenty-four hours preceding the death of the patient, which occurred on the sixth day after admission. Albumin, hyaline and granular casts and finally blood, appeared in increasing amounts in the urine as the end approached.

AUTOPSY FINDINGS.

The subject was a well developed white male. The rigor mortis was marked. The mucous membranes were cyanotic, and the pupils equal. The subcutaneous tissues were dry with a moderate amount of light yellow fat. Except for some extensive fibrous adhesions over the right upper lobe of the lung, the pleural and peritoneal cavities were normal. The heart and pericardium were normal. The right lung had hypostatic congestion at the base. The bronchi of the left lung were filled with a mucopurulent exudate and the bronchial mucous membrane was moderately congested. There were no areas of consolidation. The microscopic sections of the left lung showed many of the alveoli containing red blood cells with considerable edema and mononuclear infiltration of the alveolar walls.

The liver was normal in size with a smooth, glistening capsule. Its cut surface bulged slightly. The markings were indistinct. There was a fatty infiltration of the liver cells. The gallbladder was normal.

The spleen was swollen, soft and pale. The capsule was wrinkled, indicating a greater degree of antemortem congestion. On section the markings were prominent and the pulp did not scrape readily. The microscope revealed only a very high grade congestion.

The kidneys were swollen, soft and pale. The capsule stripped easily, leaving a smooth surface. On section considerable pathology was apparent macroscopically. The cortex was much thickened, opaque and pale. It was streaked with dilated cortical vessels and there were a few scattered punctate hemorrhages. The medulla and the pelvis were also highly congested. Microscopically the glomeruli showed a mild degree of change in the shape of some edema of the cells. The epithelium of the tubules, particularly the convoluted ones, was swollen to such a degree as to occlude the lumen completely in the majority of instances. These cells had all but lost their identity due to the nuclear and cytoplastic damage. All the vessels of the parenchyma, but particularly the straight and arcuate, were filled to more than capacity, and in addition there were numerous areas of blood extravasation into the renal parenchyma.

The pancreas was normal.

The bladder and genitalia were normal.

The gastrointestinal tract showed some changes of interest. The stomach, grossly, was edematous and swollen with a clear glistening surface to the mucosa. There were no ulcers. The deeper parts of the mucosa and submucosa contained numerous collections of round cells. The congestion and edema of the stomach wall was quite apparent.

Throughout the small gut there was considerable edema of the mucosa with numerous small ecchymotic areas scattered through the submucosa. There were no ulcers or necroses of the intestinal epithelium.

The number of cases reported are few. It is well known that ethyl alcohol is easily and completely oxidized in the body, methyl alcohol is not.

CH_3OH equals H_2CO plus $H\,COOH$
Methyl Alcohol Formaldehyde Formic Acid

$CH_3CH(OH(COOH))$ equals CH_3CHO plus $HCOOH$
Lactic Acid Acetaldehyde Formic Acid

Pohl, in 1893, found appreciable amounts of formic acid in the urine of animals given methyl alcohol orally or subcutaneously. Only 18% of the formic acid was recovered in the urine of such animals with 55% from the expired air. This left an appreciable quantity of formic acid (28%) unaccounted for. It was then assumed that the toxicity of methyl alcohol was due to an acidosis rather than to the formic acid which is practically harmless even in large amounts. This was partially substantiated by Schmiedeberg who demonstrated an increased amount of ammonia in the urine. In addition, many of his cases showed an appreciable diminution of the alkali reserve. This variation in the alkali reserve was not always the case, as Haskell, Hileman and Gardner often found a marked reduction of alkali in dogs with no evidence of intoxication and vice versa. The excretion of lactic acid was also increased and there was a rise in the urinary creatin excretion. Harrap and Benedict have also made the interesting observation that the excretion of formic acid is delayed when ethyl or amyl alcohol or acetone has been taken in conjunction with the methyl alcohol. This may have had something to do with the failure of therapeutic efforts in the above case.

Many of the authors have pointed out the difference between the two types of poisoning, i.e., the chronic and acute. Repeated small doses of methyl alcohol due to the slow and incomplete oxidation resulted in a tendency to accumulation which finally brought the patient for medical aid when the body was saturated and the toxin was so distributed as to make it impossible of proper and rapid elimination. In the acute cases, a single large dose with prompt treatment offered the most favorable prognosis. The absorption and the elimination of the toxin was slow. The lungs, stomach and kidneys seemed to participate in the elimination. Bengers obtained three times the amount of methyl alcohol in the combined stomach washings of the second and third day as he was able to obtain on the first day.

According to Isaacs, Cincinnati, the early symptoms which this case illustrates so well seem to group themselves around a paralysis or depression of both the medulla and the cranial autonomic system, whereas the later symptoms might well be ascribed to the failing functions of the kidney and gastrointestinal tract due to the damage sustained in the elimination of the toxin from the blood stream.

TREATMENT.

1.—Repeated lavage of the stomach with ½% sodium bicarbonate solution for at least three days after the ingestion of the toxin.

2.—The use of a 5% sodium bicarbonate solution intravenously, 400-500 cc. amounts for several days until the alkali reserve is increased and the urine made alkaline.

3.—Three to four ounces of magnesium sulphate 50% left in the stomach to aid in clearing out the lower intestines.

4.—Hot soda colon irrigations twice daily.

5.—Blindness—Fenton advises the use of dionin in the eyes. Zethelins felt that lumbar puncture contributed much to the recovery of vision in these cases.

SUMMARY.

1.—Repeated small doses of methyl alcohol are more toxic than a single large dose.

2.—The gastrointesinal tract and the kidneys show the greatest pathological changes.

3.—Careful gastric lavage, alkalinization and measures to protect the kidney seem to be the best line of treatment.

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A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Nebraska. Formerly Lt. Col., M. C., U. S. Army.

CHAPTER VI.

By Spring of 1918, some sixty to seventy Americal medical officers had been assigned for duty in the British Orthopaedic Centers. They were assigned with a double purpose; that they might help as much as possible in caring for the British wounded and also that they might learn and apply, when the proper time came, the dearly bought lessons of the British in their two and a half or three years of war experience.

Especially after the British War Office investigations referred to in the last chapter, the Americans on duty with the British were thoroughly impressed with the importance of the prevention and early correction of deformity.

The American medical officers had also been given an opportunity to familiarize themselves with the excellent splint methods employed by all the assistants and disciples of Sir Robert Jones. This experience was not only with the ring Thomas knee splint, which had proven so successful in the treatment of fractures of the femur; but with the long and short posterior irons for ankle joint, knee joint, sciatic nerve and hip injuries; the Jones humerus traction splint for upper arm and elbow injuries; the long and short cock-up splints for forearm, wrist and hand injuries, etc. All of these splints were being employed in the British hospitals with or without surgical operations and a tremendous amount of deformity was being prevented or overcome.

Already the work of the Orthopaedic Centers had made a considerable impression upon all the surgeons in the British Isles. It was hoped, therefore, that the experience which had resulted in considerable progress in the surgery of injuries in Great Britain, might be passed along to the Americans as promptly as possible. In this way valuable lives and limbs might be saved without the bitter experience the British had had during the first year or two of the war.

The application of orthopedic principles to the surgery of injuries had not become universal in Great Britain. It was evident to everyone, however, that a great deal of progress along these lines had been made. One of the best indications of progress among the British was the circulation during the fall of 1918 of a circular defining the scope of orthopedic surgery in the British hospitals.

France, March 3, 1918.

Circular No. 11.

The following instructions are issued for the guidance of all Medical Officers:—

1. Injuries to the bones and joints, as well as of the muscles and tendons adjacent to these structures, represent a large percentage of the casualties of both the Training and the Combat Periods of an Army.

2. To restore useful function to these injured structures is one of the purposes of the Medical Organization of the Army. The problema involved in this have to do not only with the cleansing and healing of the wounds, but also with the restoration of motion in the joint or strength to the part. This latter part naturally follows the first, but it is essential that the first part be carried out with reference to that which is to follow. Unless this second part of the treatment, the restoration of strength and motion, is carried out, much of the first part is purposeless.

3. To insure to the man not only the proper treatment for this type of injury, but the proper supervision until he is as fully restored as possible, necessitates some form of radical control that makes it impossible for a man to be overlooked in inevitable transfers, from service to service, or hospital to hospital.

4. Since so much of the ultimate result in these conditions depends upon orthopaedic measures after the first treatment of the wounds has been carried out, the following will govern:—

The Director of Orthopaedic Surgery is responsible for the treatment of the injuries or diseases of the bones or joints, exclusive of the head and face.

He will be held responsible for the treatment of injuries or diseases of the ligaments, tendons or muscles, that are involved in the joint function, of the extremities.

Officers attached to other Divisions may operate upon and treat such conditions, but the Division of Orthopaedic Surgery, through its Director, will be held responsible for the character of the treatment and for the final results.

It is expected that the direction and supervision of the treatment here indicated will be carried out, in so far as is possible, in co-operation with the Director of the Division of General Surgery.

5. To carry out the instructions of this circular, the Director of the Division of Orthopaedic Surgery will arrange so that representatives of his Division will see all cases of the nature described, to determine whether or not their management is proceeding satisfactorily so as to obtain the best possible results. These representatives will report to the Commanding Officers of the hospitals in which such patients are being treated and their services as consultants will be freely utilized: any recommendation made by them as to change of treatment, transfer to some other professional service, or hospital will ordinarily, if the military situation permits, receive favorable consideration.

6. It is not the intention of this order to interfere with the routine work of hospitals, but to insure to the soldier proper supervision during the time of his treatment and the period of his convalescence.

By Command of General Pershing:
APPROVED:
J. G. Harhord,
Chief of Staff.

A. E. Bradley,
Brig. Gen., N. A.,
Chief Surgeon.

The text of this circular can not at this moment be given. But in general it specified that all bone, joint, peripheral nerve and soft parts injuries with existing or impending deformity should be classified as orthopedic and referred to orthopedic centers or consulting orthopedic surgeons for treatment or advice.

Col. Goldthwait succeeded early in 1918 in having a similar circular issued from headquarters of the American Expeditionary Force in France. This circular was so important that a copy is being reproduced herewith:

Somewhat later, in May, 1918, Circular No. 29 was issued from the Chief Surgeon's Office, A. E. F., as follows:

Circular No. 29. France, 21 May, 1918.

The following instructions are issued for the guidance of all medical officers, superseding Circular No. 11, C. S. O., March 6, 1918:

1. Injuries to the bones and joints, as well as of the muscles and tendons adjacent to these structures, represent a large percentage of the casualties of both the Training and Combat Periods of an Army.

2. To restore useful function to these injured structures is one of the purposes of the Medical Organization of the Army. The problems involved in this have to do not only with the cleaning and healing of the wounds, but also with the restoration of motion in the joint and strength to the part. This latter part naturally follows the first, but it is essential that the first part be carried out with reference to that which is to follow. Unless this second part of the treatment, the restoration of strength and motion, is carried out, much of the first part is purposeless.

3. To insure the man not only the proper treatment of this type of injury, but the proper supervision until he is as fully restored as possible, necessitates some form of radical control that makes it impossible for a man to be overlooked in inevitable transfers, from service to service, or hospital to hospital.

4. Since so much of the ultimate result in these conditions depends upon orthopedic measure after the first treatment of wounds has been carried out, the following will govern:—

The Senior Consultant, Orthopaedic Surgery, will, under the Chief Consultant, Surgical Services, make such recommendations relative to treatment of "injuries and diseases of the bones and joints, other than those of the head, as well as to the injuries or diseases (other than those of nerve lesions) of the structures involved in joint functions," as will insure early restoration of functions, shorten convalescence, and hasten return to active military duty.

He will supervise the sub-divisions of surgery, pertaining to bones and joints, in a manner which will permit the complete surgical harmony necessary for cooperation in treatment of these cases by either general or orthopaedic surgeons, in formations from front to rear. To insure a minimum loss of function to the parts involved, uniform cooperation must be maintained by the Chief Consultant, Surgical Service, during both early treatment and all stages of convalescence.

5. To carry out the provisions of this circular, the Chief Consultant, Surgical Services, will make such provisions as are deemed necessary to insure a complete survey of these cases at regular intervals, and determine if the treatment is progressing in a satisfactory manner. Consultants in orthopaedic surgery who are charged with the supervision of such cases within Hospital Centers and other formations will ordinarily be called in consultation for special cases, through the Commanding Officers of the units in question, and the Consultants will report to him prior to completion of their investigations. Commanding Officers of hospitals are expected to freely utilize the services of these consultants in the manner described above. Any recommendations made by them as to change of treatment, or transfer to some other professional service or hospital, will ordinarily, if the military situation permits, receive favorable consideration.

6. It is not the intention of this order to interfere with the routine of hospitals, but to insure to the soldier proper supervision during the time of his treatment and the period of his convalescence.

M. W. Ireland,
Brig. Gen., M. C., N. A.,
Chief Surgeon.

It will be remembered that the first contingent of the Americans, twenty in number, had been assigned to various centers in Great Britain with the idea of remaining about three months.

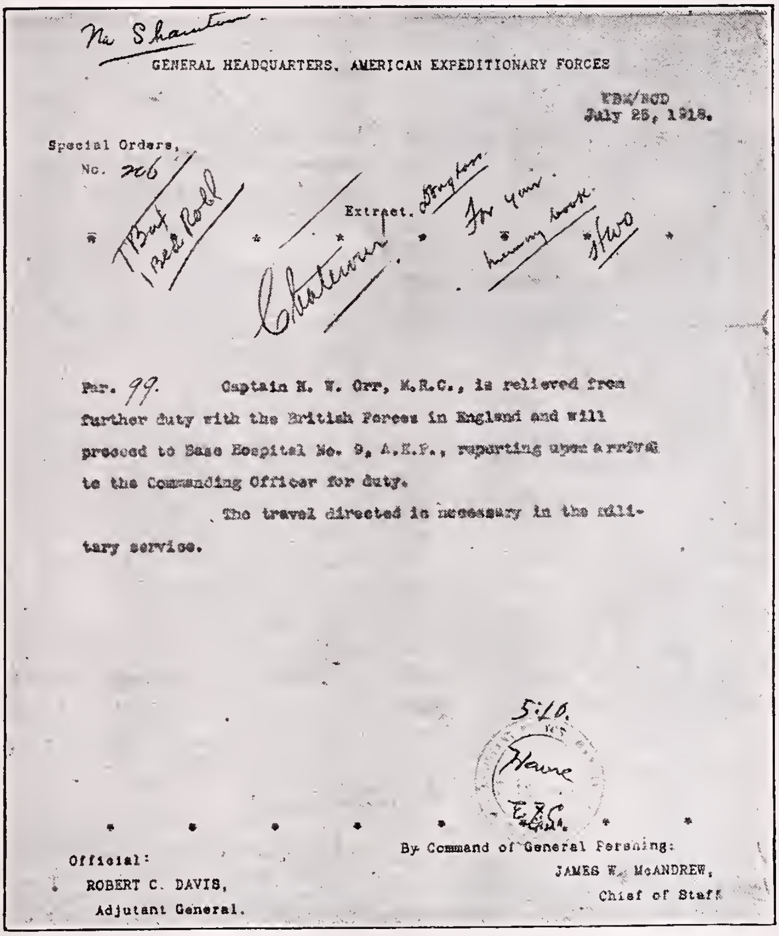
The time had now gone on until in July, 1918, some of us had been at our stations with the British for more than a year. With the increase of activity and participation of the Americans in the fighting, we became very anxious to carry on that part of our work which had to do with the application of our experience to the problems of the American wounded.

Personally, I felt that I had had an experience which would be of some advantage if properly applied in France. I had not only examined, prescribed for and treated a great many British wounded; but I had had an opportunity to come in contact with many of the administrative problems in the British hospitals. The British officers in our own center at the Welsh Metropolitan War Hospital, had become most cordial, not only personally but professionally. When Col. Ferguson was making his inspection visits as A. D. M. S. in the territory of the Third Western General Hospital, Col. Goodall (in charge of our hospital) very kindly allowed me to accompany them. In this way I got the viewpoint of Headquarters as well as our local officers on the treatment, return to duty, and discharge (from hospital and from the army) of the various kinds of wounded. This experience as it afterwards proved, was an extremely valuable one for me.

In July, 1918, a conference of medical officers on duty in Orthopaedic Centers was called by Sir Robert Jones to meet in Liverpool. Not having had leave of absence during more than a year abroad I decided to ask for two weeks' leave following the conference. I was hoping that I could get to France and get some first hand knowledge as to what was happening among the Americans.

My application for leave was approved, but just as I was leaving Cardiff to attend the Liverpool conference, orders came assigning me to duty in France. In fact, I had only a few hours to get my things together and take the train. I went to the Liverpool meeting, which was an extremely profitable one, but from there instead of returning to Cardiff, I went to London, Southampton, and Le Havre.

At Southampton I met Capt. Kidner, who was on leave from his duties in London for an official visit to some of the American hospitals in France. He was due to return to England as Orthopaedic Consultant to the American hospitals. Others of us were destined to be assigned in similar capacities to American hospital areas in France. Temporarily, I was to proceed to Base Hospital No. 9 at Chateauroux. This hospital, at that time under the command of Lt. Col. George W. Hawley, had become the first important American Orthopedic Hospital in A. E. F.



GENERAL HEADQUARTERS, AMERICAN EXPEDITIONARY FORCES

WBM/RCD
July 25, 1918.

Special Orders,
No. 206

Extract.

* * * * * * *

Chateauroux

For your memory book

H W O

Par. 99. Captain H. W. Orr, M.R.C., is relieved from further duty with the British Forces in England and will proceed to Base Hospital No. 9, A.E.F., reporting upon arrival to the Commanding Officer for duty.

The travel directed is necessary in the military service.

5:10.

Havre

* * * * * * *

By Command of General Pershing:
JAMES W. McANDREW,
Chief of Staff

Official:
ROBERT C. DAVIS,
Adjutant General.

Upon my arrival at Base Hospital No. 9 I was extremely interested to find the conditions which presented themselves in the first of my American hospitals in France. There were about 2,000 patients in the hospital. About one-half of these were of the more serious kind of battle casualties; bone and joint injuries, injuries to the peripheral nerves and soft part injuries with existing or impending deformity. There were several officers assigned as orthopedic surgeons or on the general surgical divisions who were doing first class work in the care of these patients. Lt. R. D. Schrock of Omaha, and Lt. Richmond Stephens of New York, were notable among these. Capt. Hartman of Findlay, Ohio, was also taking an active interest in these cases. It is fair to say that as far as the efforts of these industrious surgeons and a few others were concerned, the patients were receiving, from an orthopedic standpoint, excellent care.

However, one found here as elsewhere a considerable number of wards in which, either because of lack of knowledge, lack of interest or lack of industry on the part of the ward surgeons, there were uncorrected, unsplinted, and otherwise more or less neglected patients. This neglect showed itself in a few principal ways. There was shortening and deformity of some fractures, especially of the compound fractures. There were also many patients with shoulders, elbows, wrists, knees, and ankles that were healing after compound injuries in bad position.

One of the most striking illustrations of this was to be found in the upper arm and elbow injuries. These patients were mostly returning from the front in what were called hinged ring Thomas arm splints. This splint made traction on the arm with the whole arm straight and the hand pronated. It was a good splint for transportation because the arm would lie beside the patient on a litter or in a cot. It was a bad treatment splint, however, because the straight stiff arm is a useless arm. In many of these cases, however, at Base Hospital No. 9 and elsewhere, this straight splint was left on while large shoulder, upper arm, or elbow wounds were being carefully dakinized and healed. Our method of dealing with this large problem at Savenay will be spoken of in another chapter.

One found in the Army hospitals a considerable number of surgeons who were never able to adjust themselves to the problem of splinting a compound fracture. This was one of the things we had borne down upon us in our experience with the British. I was extremely anxious to apply here, at my first opportunity, the methods of Sir Robert Jones, which we had learned in the British hospitals. To my genuine sorrow, however, I found neither in Base Hospital No. 9 nor elsewhere a receptive attitude in this matter. Those who had had a few months of experience with the Americans had acquired methods with which they were satisfied. Those who had had little or no experience whatever, in such cases were apparently even less willing to learn.

My own position in Base Hospital No. 9, therefore, resolved itself into the care of the patients in one 40 bed ward and a few days later of the officer patients in the officers' ward.

At about this time, Col. Brackett, Chief of the Orthopedic Service in the United States, who had come over from Washington, visited our hospital. With his usual generosity he afforded me an opportunity to discuss this situation with him. He had many interesting and valuable comments and suggestions to make. A day or two later Col. Joel E. Goldthwait, Chief Consultant in Orthopedic Surgery, A. E. F., also arrived. As an immediate result of a similar conference with him, I was assigned as consultant in Orthopedic Surgery to Base Section No. 1, A. E. F., with headquarters at Base Hospital No. 8, Savenay. Other Americans who had been on duty with the British were assigned as consultants the same time.

On my way to the new station, I stopped for a few hours in Angers with Captain E. W. Fiske. Captain Fiske was conducting a large and important orthopedic service at this hospital (Base Hospital No. 27). He was furnishing good care to a considerable number of patients. In Angers I saw for the first time the very extensive use of Balkan frames, weight and pulley traction and elaborate apparatus which had become quite generally used in the American hospitals, especially in Paris. This work was along the line of methods worked out by Col. Joseph A. Blake, and differed to a considerable extent from the simpler and what appeared to me to be the more practical methods of the British.

Upon arrival at Savenay a most interesting situation was found. I was assigned as Chief of the Orthopedic Service and Consultant in Orthopedic Surgery to Base Hospital No. 8, Savenay, Base Hospitals No. 34, 38, and 11 at Nantes, and Base Hospital No. 101 at St. Nazaire. My duties as specified particularly, were to inspect all patients in Savenay or upon arrival as to their condition for transfer to the United States. A large hospital center had already been planned for Savenay and the area had been designated as the hospital center through which all American sick and wounded were to be sent to America. Already one or two train loads of patients had been sent, and it had been reported that their condition for transportation had not been satisfactory.

It became, then, my duty to decide whether the wounded, upon arrival in Savenay, were suitable for immediate transfer to the United States or whether they should be detained for splints, the correction of deformities, further surgical treatment or even amputation. It was stipulated in orders that no amputations were to be done in any area except after consultation with and approval by the Consultant in orthopedic surgery.

My position was one which, of course, brought me at once into conflict with the surgical service. Until the moment of my arrival, patients had been designated for transfer to the United States by the ward surgeons, who were accountable to the Chief of Surgical Service. In making up the first convoy to leave Savenay, after my arrival, this plan was followed. I was given no opportunity to see the patients until they were on the train. Upon inspection of this train load of patients, about 400 in number, I found about 40 whom I considered unfit to go. They presented such conditions as compound fractures, ununited and without splints, wrists, ankles and knees which were healing or ankylosed in bad position. Some cases of nerve injuries had drop wrists and drop feet with no splints to support them.

AMERICAN EXPEDITIONARY FORCES

France, 27th August, 1918.

CIRCULAR LETTER NO. 7-A.

From: The Chief Surgeon.

To: C. O.s all Base Hospitals, Hospital Centers and Surgeons of Sections.

Subject: Consultants in Orthopaedic Surgery.

1. The following named officers have been appointed as Consultants in Orthopaedic Surgery for the hospitals in the districts given after their names. Hospitals requiring the services of consultants in orthopaedic surgery can apply to the nearest Consultant at the address given:

Name	Address	District
Major Geo. W. Hawley, MRC	Base Hospital No. 9	Base Hospital No. 9 Limoges
Capt. Z. B. Adams, MRC	Base Hospital No. 114	Beau Desert Center Bordeaux Vauclaire
Capt. C. F. Eikenbary, MRC	Beaune	Beaune Center Allerey Center Dijon Autun
Capt. C. B. Francisco, MRC	3rd Depot Division	3rd Depot Division St. Amand-Montrond Mars Center Mesves Center Pougues-les-Eaux
Capt. J. C. Graves, MRC	St. Aignan-Nevers	1st Depot Division Tours Blois Orleans
Capt. H. W. Orr, MRC	Base Hospital No. 8	Savenay Center Nantes Center St. Nazaire
Capt. W. W. Plummer, MRC	Base Hospital No. 116	Bazoilles Center Vittel-Contrexeville Neufchateau Chaumont Langres Rimaucourt
Capt. DeForest F. Willard, MRC	Vichy Center	Vichy Center Chatol Guyon Royat Roanne

M. W. Ireland,
Brig. Gen., M. C., N. A.,
Chief Surgeon.

All of these patients were marked for removal from the train and return to their wards. The Chief of Surgical Service protested my decision with regard to these cases but Colonel Webb. E. Cooper, Commanding Officer, after considering carefully my written and signed report in regard to these patients, made a ruling sustaining me in the matter. It affords me much pleasure to say that this attitude of Colonel Cooper was one he maintained consistently throughout our entire service at Savenay. During the time that he was commanding officer in Base Hospital No. 8 and subsequently of the Savenay Hospital Center, both officially and unofficially he was always deeply concerned for the welfare of soldier and officer patients.

(To Be Continued).

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Vol. VI. October, 1921. No. 10

PERFECTION IS NO TRIFLE.

Printer and editor regret the transposition of several articles in the September Journal. In spite of painstaking effort these little slips do occur. It is not for want of effort that your Journal is not perfect.

THE LEGAL STATUS OF CLINICAL PSYCHOLOGIST QUESTIONED.

The last legislature passed an act providing for a clinical psychologist who shall examine and study all cases of juvenile delinquency in state institutions, make full reports thereon and recommend to the Board of Control any cases that should be transferred to other institutions, etc.

On the face of it the act must strongly appeal to all persons interested in child welfare as a distinct step in advance.

The constitutionality of the act is questioned by Judge Allen of the Ninth Judicial District of Nebraska and before the act becomes operative the higher court will be asked to pass upon it.

THE COUNTY SCHOOL NURSE.

The Red Cross Nurse as a welfare worker in country and urban schools of agricultural Nebraska has arrived. The benefits to be derived from her work properly carried out are incalculable. She examines the school children, notes defects and brings these defects to the attention of the parents; she talks to the children on the fundamentals of hygiene; she supervises the better babies contest at the county fair; she responds to sick calls in great emergencies, etc.

It is to be assumed that the special training given by the Red Cross organization for this work has fully prepared the nurse for the work before her. In proportion as she does this work modestly and conscientiously will she be a valuable asset to the community. We like to think of the nurse as the handmaid of the physician and surgeon.

Scattered instances of overwise nurses assuming to know more than the doctor, criticising the work of the physician and surgeon, recommending patent medicines, etc., are not so rare as to be negligible, and this phase may well be a matter of some concern to the medical profession.

CANCER WEEK.

In the previous issue of the Journal, it was announced on the editorial page that October 30 to November 5 would be "Cancer Week"; that in this week a campaign of education would be waged against the ravages of cancer all over the United States and Canada. In Nebraska, this campaign will be carried on under the auspices of the State Medical, District Medical and the County Medical Societies.

Much has already been done in the way of organization of this campaign and a strenuous effort is being made to present the problem of early recognition and early rational treatment of cancer to all medical organizations of the state in the form of scientific programs, and to every community of 500 or more inhabitants in the form of public, illustrated talks. The Executive Committee in charge of this work is encouraged by the hearty cooperation of the doctors throughout the state. Some of our district organizers have not yet completed their organization but it is hoped that they will have done their work before this goes to press.

Each county has a chairman who will organize the work in his county under the direction of the district organizer. In many portions of the state, two or more counties will unite in their scientific meetings and in so doing are able to put on an elaborate program in the form of a symposium on "The Early Recognition of Cancer". These symposiums usually consist of four illustrated talks on cancer of the gastro-intestinal tract, breast, uterus and skin. Every possible assistance will be given by the American Society for the Control of Cancer and by the State Executive Committee in furthering plans for these meetings. Lantern slides can be furnished, outlines for lectures, pamphlets for distribution at the public meetings and editorials for the local papers — all these will be supplied by the National Organization through the State Executive Committee. Dr. A. P. Overgaard is Secretary of the Executive Committee and will respond to all requests for assistance in the way of lecture speakers, illustrations for the lectures and plans of organization.

P. F.

A RECENT COURT DECISION.

Every now and then something that interests doctors gets into the courts and the decision which is handed down is interesting to them not only on account of what the decision settled but also on account of what it did not settle. We have recently had such a decision given us in regard to the term "Aspirin."

For a number of years we all waited for the patent on this preparation to expire, so that other manufacturers could make it and thus bring down the price, which was exhorbitant. The Bayer concern, however, at about the time of the ending of their patent put on an intense advertising campaign to the laity and taught them to believe that "The Bayer Aspirin" was the only pure product.

However, the patent expired and other manufacturers who began to make the drug found that they could not use the old term due to a copyright. This led to the adoption of several other names, one officinal name "Acetylsalicylic Acid". Out of the controversy over these names grew the recent decision, which is in short, to the effect, that if a doctor writes for "Aspirin" the druggist must use the Bayer product. If the other product is wanted he must specify by using the officinal name. If the layman asks the druggist for "Aspirin" then the druggist can supply any preparation that he desires.

It is readily seen that this decision does not settle the whole difficulty. The laity has been educated to fear any preparation other than the Bayer and consequently insist on it, and it falls on the doctor to get people away from this idea. The writer has tried to do this conscientiously and can sympathize with anyone else who has tried. If you try to teach the average person to use the name Acetylsalicylic Acid it is too hard for him to remember so he falls back to Aspirin.

The officinal name of course is useful to the doctor for it tells him what the drug is composed of, but it carries no meaning to the layman. Would it not be better then to use some name that is simple and easily remembered? If this were done as a practise in naming our drugs a great difficulty that we have in opposing the proprietary and patented drugs would be overcome. As it now stands with the layman insisting on a tablet with the Bayer trademark it does seem to the writer that the court decision has not completely settled the question, for with Aspirin as with many other drugs the bulk of the sales are to the layman direct.

R. B. A.

ENFORCED FIRST STAGE OF LABOR.

In a recent meeting of the New York Obstetrical Society they had a symposium on obstetrics. One on "Enforced First Stage of Labor" by Franklin A. Dorman is exceedingly interesting. This article, and others of the same tenor, would indicate that the ultra pendulum in obstetrics has gone its limit and is swinging the other way.

Abstracts of this article as published in "The American Journal of Obstetrics and Gynecology," follow:

"I would state my thesis as follows: that enforced first stage means induction of labor; that induction of labor means use of the cervical bag; and, lastly, that the employment of the bag constitutes an operative procedure,—one that is in itself of such serious possibilities that its adoption should be under the best indications."

It would seem from this paragraph that Mr. Dorman recognizes only one operative method of inducing the first stage of labor.

"The value of the bag in labor is well established. I venture to say that there are few who would care to practice obstetrics without it. However, methods or fashions of treatment change with experience. Some at first regard the bag as of wide application; later show clearly certain disadvantages which tend to limit its scope. Of late years it has seemed to me that the induction of labor has appealed less often, that I have markedly limited its application. To verify this, I made a study of my private case records. For purposes of comparison, my first 500 cases, dating from the beginning of private practice in the fall of 1902, were contrasted with a later series of 500, to date. To my surprise, I found that the first series showed 85 inductions by bag, 1 by bougie; while in the last series there were only 25 bag introductions."

"To answer the question which arose as to whether this change had affected statistics, a review of the first cases demonstrated a stillbirth mortality of 6.8 per cent, while the last 500 cases gave a stillbirth mortality of 1.8 per cent, a difference of 5 per cent."

"Why has this conservatism in the induction of labor developed? The answer is clearly given when we study the sequelae of bag cases. In this series of 110 cases, there were 22 high forceps, 24 medium forceps, 6 low forceps, and 6 versions. In 18 cases it was necessary to complete dilatation by digital stretching. In 10 cases, a primary trachelorrhaphy had to be done. Five cases demanded tamponade of the uterus for hemorrhage postpartum. There were 9 stillbirths and 9 fetal deaths. Three of the inductions were failures. In another case the cervix had to be incised in order to complete delivery. The bag converted one vertex case into a breech. Labor was prolonged beyond 20 hours in 26 cases. The maternal morbidity of the series I am unable to present, but it must have been above normal."

"Here then, is the indictment against the unnecessary use of bags. It is an operation which demands the most careful aseptic precautions, as it introduces into the uterus for a longer or a shorter period a foreign body which may later have to be replaced by another and larger body, and perhaps again by yet another. There is no definite rule in regard to the uterine response to the stimulus, which may be much delayed or transitory in its effect. I have more than once seen a cervix dilated to four fingers, close down to one finger in a few hours after the bag expulsion. In one case, the patient was having regular uterine contractions stimulated by pituitrin."

"The labor that is induced is apt to be of a poor type, as shown by a large number of protracted cases. The final dilatation is often incomplete, without the proper thinning of the lower segment. The evidence of the frequent and serious operative deliveries clearly shows this."

"Granting, then, the possible dangers of the use of the bag, it is important to get as clearly as possible in our minds the justifiable conditions for its employment, and to be able in a given case to determine when the importance of terminating pregnancy outweighs the disadvantage of a bag labor."

"The commonest indication in our first 500 series was for overtime (?) gestations. This was found 29 times. In my last series, while it was still my most frequent indication, it was used only seven times. It is my increasing conviction that overtime babies are rarer than is commonly supposed, and that an element of the ready use of bags in these cases is the nervous strain associated with an anxious patient and exigent relatives. The frequency with which patients go three weeks past their apparent date and produce normal children should make us extremely careful of an arbitrary determination of term. It is my contention that a normal labor, even with a large infant, is apt to be safer than an induced one with a smaller child."

"The next frequent indication in our first series was the deformed pelvis. This was found 17 times, and in this series I am convinced that I got my worst results. In my last series it was used twice."

"In the toxemias of pregnancy, the enforced labor must be an occasional resort. My first series showed 11 cases; my last series, six. I fail to see how this indication can be much reduced, except by careful prenatal supervision, unless we are able in eclampsia to persuade ourselves to fall back entirely upon the morphine and expectant treatment."

"Ruptured membranes without uterine pains have supplied a seductive lure for the use of bags. My early cases showed its use seven times; in my late series, four times. I believe that my next series will show very few, if any, dry labors induced."

"In so far as the figures in so few cases can be used as an index, bags did not reduce the maternal morbidity and appeared unfavorable to the safety of the fetus. One prolapse of the cord occurred as a complication of the use of the bag, but did not cause stillbirth. The termination of the bag labors resulted in 44 per cent of operative deliveries, as compared with 28 per cent of all dry labors."

"The enforced first stage is therefore in most cases a matter of the use of bags; its serious consequences are such that its undertaking should only be as the resort to a lesser evil. In the writer's experience it has decreased to about 5 per cent of his labors."

I think that rational obstetrics is coming into its own and that quite rapidly.

A. B. S.

HOSPITAL NOTES.

A nurse's home is to be built adjoining the Methodist hospital, Omaha, in the immediate future.

Drs. Jensen and Morris, Newman Grove, have purchased a private house and converted it into a hospital.

Damage by fire estimated at five thousand dollars. occurred to the power plant at the Norfolk State Hospital Aug. 23.

The Dominican Sisters have assumed charge of the General Hospital, McCook, pending the building of their own new hospital.

Work on the new Evans hospital, Columbus. which had been suspended for some time, has been resumed, and the hospital will be completed at an early day.

The Disabled War Veterans are moving for a government hospital in Nebraska. Already Grand Island and Kearney have signified their willingness to have the hospital.

The Methodist Hospital for Scottsbluff, is assured. The question whether a new building is to be erected or the uncompleted North American Hotel property shall be acquired and converted into a hospital is to be decided by local subscribers to the $50,000 hospital fund.

John H. Burns of Laurel, whose death occurred May 9, bequeathed $150,000 for the purpose of founding a hospital to be known as the "John H. Burns Memorial Hospital." Dr. L. J. Townsend, Sioux City who cared for Mr. Burns in his last illness is to have charge of the hospital, and is also to designate the city in northeast Nebraska in which the hospital is to be located.

SOCIETY NOTES.

The Keith county medical society was born at Ogallala August 16. Dr. C. E. Vandiver is president, Dr. C. C. Wallingford, Secretary-Treasurer.

The fall meeting of the 10th Councilor District Society and the Republican Valley Medical Association will be held on the 27th of October at Hastings, Nebr.

The 9th Councilor District Medical Society, under direction of Dr. R. B. Bryson, of Callaway, will hold its first annual meeting at Grand Island on October 25th.

The Thayer county medical society held its quarterly meeting at the Blue Valley Hospital at Hebron, August 25, with eleven members present. Dr. R. L. Sands read a paper on "Abnormalities in Breast Milk," and Dr. H. H. Stretton presented a clinical case. Refreshments were served by the management of the hospital after the meeting.

The Lancaster county medical society will hold its first bi-weekly meeting for the 1921-1922 session, Saturday evening, October 8, 1921. The meetings will be held regularly every two weeks, except December 31. All visiting physicians are cordially invited to be the guests of the society at any or all meetings.

One hundred and twenty-five alumni attended the Twelfth Annual Reunion of the Alumni Association of the University of Nebraska College of Medicine held in Omaha, September 5-9 inclusive. The program for the week consisted of clinics, ward walks and case demonstrations each forenoon. Tuesday, Thursday and Friday were spent in the University Hospital. Clinics in surgery were given by Drs. J. E. Summers. J. R. Nilsson, A. C. Stokes, C. H. Waters, B. B. Davis, C. A. Hull, J. P. Lord and R. D. Schrock. In addition to these there were daily clinics in medicine, nervous and mental diseases, obstetrics. diseases of the nose and throat, pediatrics and ophthalmology. Wednesday forenoon the Association was the guest of the Methodist Hospital. The following clinics were given: Surgery, Dr. A. F. Jonas; medicine, Dr. W. O. Bridges and Dr. E. L. Bridges; pediatrics, Dr. H. W. McClanahan and Dr. Clyde Moore; ophthalmology, Dr. Harold Gifford and Dr. J. M. Patton and laryngology, Dr. W. F. Callfas.

Round table discussions followed the noon luncheons on the following topics: "The Community Hospital," by Dr. Irving S. Cutter; "Fractures," by Dr. E. L. Brush and Dr. Chas. F. Moon; "Meningitis and Allied States," by Dr. H. A. Wigton and Dr. Andrew Harvey; "The Group Clinic," by Dr. J. C. Waddell and Dr. W. J. Douglas; "Gastro-intestinal Carcinoma," by Dr. Morris Nielson. At the smoker Tuesday evening at the University Club, "Congenital Anomalies of the Heart" was discussed by Dr. C. W. Poynter and Dr. H. M. McClanahan. Thursday evening the annual banquet was held at the Field Club. The address of the evening was delivered by Dr. Oliver Chambers, president of the Association. Wives of the visiting physicians were entertained at tea at the Happy Hollow Club Wednesday afternoon.

Dr. Edward L. Rohlf of Waterloo was elected president of the organization for the ensuing year: Dr. Clyde Moore of Omaha was elected first vice-president; Dr. Fredericka Phillips of Seattle, Washington second vice president and Dr. George B. Potter of Omaha secretary-treasurer.

The first meeting of the Fourth Councillor District, Nebraska state medical association. was held at Norfolk, Sept. 15. about thirty doctors being present. Dr. A. S. Cook, Randolph, was elected president and Dr. E. L. Brush, Norfolk, secretary-treasurer.

A committee of three was appointed to take up with the Elkhorn valley medical society the proposition of fusing the two organizations. Drs. P. H. Salter and F. A. Long were named as members of this committee, the third member to be named later.

Dr. A. Sachs, Omaha, read a paper on "Exophthalmic Goitre", Dr. E. V. Neuman, Wausa, "The Roentgen Ray in General Practice", Dr. P. H. Salter and Dr. E. L. Brush spoke of the "Diseased Bladder".

NOTES ABOUT THE DOCTOR.

Dr. J. C. Wilson has moved from Holstein to University Place.

Dr. J. M. Willis, formerly of Arapahoe, has located at McCook.

Dr. Otto F. Dierker, formerly of Seward, has recently located at Deshler.

Dr. S. C. Clements has left Neligh to specialize in internal medicine in Lincoln.

Dr. B. F. Bailey and wife are spending the hay fever season at Carmel, Calif.

Dr. W. E. Fair, of Fort Scott, Kan., is about to engage in practice at Ravenna.

Dr. W. Y. Jones, for twenty years a practitioner at Wynot, has located in Ponca.

Dr. and Mrs. R. E. Marble have returned from a month's trip along the western coast.

Dr. C. W. Parks, Syracuse, has for some time suffered severely from an infected eye.

Dr. W. O. Bridges has returned from a vacation spent in New England, mostly in Maine.

Dr. E. C. Sayre, a Chicago surgeon, has become associated with Dr. C. J. Verges, Norfolk.

Dr. Clarence Emerson, Lincoln, who had an attack of broncho-pneumonia, has resumed practice.

The residence of Dr. L. G. Simon, Sidney, was gutted by fire, August 23, entailing a heavy loss.

Dr. James Wilson, Indianapolis, Ind., a brother of Dr. O. L. Wilson, Rushville, died the last of August.

Dr. John W. Youngman, Hendley, has purchased the residence and good will of Dr. W. A. Staley, Holbrook.

Dr. James Wilson, South Bend, Indiana, visited his parents, Dr. and Mrs. O. L. Wilson, Rushville, in August.

Dr. R. B. Adams, Secretary-Treasurer, Nebraska State Medical Association, spent his vacation in Minnesota.

Radium was presented before the Utah State Medical Association by Dr. D. T. Quigley, Omaha, in mid-September.

Dr. W. E. Knox, formerly of Norcatur, Kansas, has moved to McCook and will organze a group in special lines of work.

Dr. P. R. Howard, North Bend, is about to become associated with Dr. A. E. Gadbois, Norfolk, in eye, ear, nose and throat practice.

Dr. John C. Giever, for a short time in practice at Dodge, Neb., has been become associated with Dr. M. M. Sullivan at Spaulding.

Dr. L. J. Debacker, for two years a practitioner at Spaulding, has moved to Omaha and will be connected with Creighton medical college.

Dr. Frank Borglum, Harrison, has been appointed assistant surgeon in the U. S. P. H. S. and is located at the Speedway Hospital, Chicago.

Dr. Victor E. Levine of the Creighton medical college faculty, is in the frozen north studying the question of vitamines among the Esquimaux.

Drs. P. H. Salter, Norfolk and F. G. Salter, Pierce, had the pleasure of assisting their parents celebrate their sixtieth wedding anniversary in August.

Drs. L. E. Britt and A. G. Edwards, Omaha, attended the annual convention of the National Negro Medical Association at Louisville, Ky., in August.

Dr. H. W. Orr, Lincoln, read a paper before the Wyoming State Medical Society at Casper, Sept. 7, on the "Early and Late Surgical Treatment of Bone and Joint Injuries."

Dr. H. G. Penner, for seventeen years a practitioner at Plymouth, has, owing to ill health relinguished the practice and has been succeeded by Dr. H. L. Brownson of Verdon.

Dr. George H. Misko, for a short time a practitioner at Arcadia, has purchased the residence of Dr. P. R. Howard, North Bend, and has engaged in practice at the latter place.

Dr. Chas. L. Fahnestock, for more than twenty years in practice at McCook, has moved to Lincoln to engage in practice and to give his family the opportunities of the university.

HYMENEAL.

The marriage of Dr. Edwin G. Davis and Miss Dorothy Balbach, both of Omaha, on Sept. 20, is announced.

Dr. Charles F. Ulrich, Valentine, and Miss Rose McGovern, Omaha, were married Aug. 30.

Dr. Roger Pinkerton, a Pawnee City "boy," now of Chicago was married to Miss Gretta Ritchie of Sterling, Kan., in Chicago Aug. 18. Dr. Pinkerton has an interneship in Cook county hospital.

Dr. Eugene McCabe, Emerson, and Miss Anna V. Dougherty, Newcastle were married Sept. 7.

NECROLOGICAL.

Dr. Emanuel S. Wenger, Lincoln, University of Michigan college of medicine 1889, died August 25, following an operation for ulcer of the stomach, aged 58. Dr. Wenger was prominent in the counsels of the Nebraska State Medical Association for many years.

Dr. John W. Mitchell, Superior, Grand Commander of the Knight's Templar of Nebraska, died Aug. 27, aged about 74. He was a graduate of Detroit medical college, '70, and Jefferson medical college, '77.

Dr. Hugh E. McCaw died at Hastings August 20, aged about 64.

ABDOMINAL SURGERY NUMBER

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CONTENTS

Page

Observations in 150 Cases of Gallbladder Disease, With Our Conclusions, J. S. Welch, M. D., F. A. C. S., and S. O. Reese, M. D., Lincoln, Neb. 329

A Summary of 563 Cases of Gallbladder Disease, Byron B. Davis, M. D., F. A. C. S., Omaha, Neb. 336

Gastroduodenostomy versus Gastrojejunostomy, Henry B. Boyden, M. D., Grand Island, Neb. 342

Acute Intestinal Obstruction, A. L. Cooper, B. Sc., M. D., Morrill, Neb. 347

A Civilian Surgeon's Story of the Great War, H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb. Formerly Lt. Col., M. C., U. S. Army 350

A Case of Enlarged Thymus with Autopsy Report, Floyd Clarke, M. D., and J. Harry Murphy, M. D., Omaha, Neb. 354

A Case of Hypernephroma with Autopsy Findings, Warren Thompson, M. D., Omaha, Neb. 355

Page

New and Non-Official Remedies 357-364

A Physiological Empyema Tube, Czar C. Johnson, M. D., Lincoln, Neb. 357

Editorial—

The Johns Hopkins Dictum 358

The Great Middle Class and Hospital Fees 358

Nursing Assistants Needed 358

Tuberculosis Among the Nebraska Winnebago 359

The Infant Welfare Movement 359

Notable Ability Should Be Rewarded 360

Editorial Paragraphs 361

Taffy 361

The National Board of Medical Examiners 361

Hospital Notes 362

The Societies 362

Notes About the Doctor 364

Marriages 364

Deaths 364

Books Received 364

OBSERVATIONS IN 150 CASES OF GALLBLADDER DISEASE, WITH OUR CONCLUSIONS.*

J. S. Welch, M. D., F. A. C. S., and S. O. Reese, M. D., Lincoln, Neb.

This paper is based upon our experience and studies during the management of the last 150 cases of gallbladder disease which our group has investigated. Some came only for diagnosis and returned to their former doctor or went elsewhere for treatment. Many became our cases for treatment, and of these fifty-eight received surgical care. We will concern ourselves particularly with the problems of (a) diagnosis and (b) treatment, and with the conclusions we have drawn.

(A) Beginning, then, with the diagnostic consideration, let us ask what are the cardinal groups of evidence? The following list not only enumerates these, but puts them down in the order of their relative diagnostic value as shown by our records. I think we are in agreement with most other men as to the order of their importance.

1.—A carefully taken history, remembering etiological factors and associated trouble, especially abdominal
    (a) Local evidences
    (b) Reflex evidences
2.—Physical examination
3.—Roentgen examination
    (a) Direct findings
    (b) Indirect findings
    (c) Findings with pneumoperitoneum
4.—Duodenal and gastric analyses
5.—Pneumo-peritoneoscopy
6.—Operative findings

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*Read before the Nebraska State Medical Association, Lincoln, May 11, 1921.

HISTORY.

We all understand the importance of a careful history, and if compelled to depend on any one means, this would be the most reliable. In a general and very brief way the symptoms can be divided into two groups—those giving local and those giving reflex disturbances of digestion. In one person the local symptoms may predominate and in another the reflex, but as a rule both are present. The characteristic local symptoms are the soreness and pain in the right hypochondrium which radiates to the back and right shoulder blade. Jolting or jarring often make this worse. During acute attacks of colic this pain is so severe as to require sedatives for relief.

The reflex symptoms are the effects on the neighboring organs, especially the stomach, causing nausea, vomiting, epigastric distress and fullness. Food causes distress which is relieved by eructations. In chronic cholecystitis the reflex symptoms may cause so much annoyance that the local symptoms may be overlooked easily.

The symptoms as above mentioned bear only in a typical case. They may be entirely absent and gallstones found when operating for some other condition, or when those present are very atypical. Therefore much time should be taken to elicit this history. The patient's voluntary story of the trouble and what carefully directed questioning may reveal often needs classification. This story frequently contains cardinal symptoms of ulcer or appendicitis, and indeed these do often exist. By careful classification, however, one can usually isolate the gallbladder evidence with sufficient clarity to make the history the most valuable aid. And this history should be a written record. Review and reflection should form no small part in the final summary.

PHYSICAL EXAMINATION.

As for the objective findings, that of local tenderness and rigidity in the right hypochondrium is the most important. When the gallbladder is distended a tumor may be outlined by percussion and palpation. Jaundice, when present, is important.

ROENTGEN EXAMINATION.

(a) Direct Findings—Because of the frequency with which gallbladder disease can be determined by Roentgen examination, this should be made in every condition of the upper abdomen unless it be an acute condition.

Gallbladder disease is determined roentgenologically either by the direct or the indirect evidence. The direct evidence is of more importance in determining the presence of gallstones. Absence of their shadows is no indication that they may not be found at operation; but with improved technic their presence is now seen in quite a high percentage of cases. Dr. Case says 40 to 50 per cent, Pfahler and Cole report 50 per cent, George and Leonard 85 per cent, while Carman is lower than any of these. At the Rochester clinic two thirds of the operated cases contain stones, and of these a low percentage is diagnosed by direct X-ray evidence.

(b) Indirect Findings — Gallstones in themselves are only incidental and not essential to the cholecystitis which may necessitate surgery. The infection is the entity and the gallstones are secondary to it. So in cases where gallstones are not found, as well as when attempting to determine the amount of infection, the indirect evidence is important. Thus the effect on the surrounding structures, as gastric spasm, deformity of the cap and pars pylorica, or a kink or constriction of the hepatic flexure, is determined, and is stronger Roentgen evidence for surgical proceduce than the mere presence of stones without adhesions. (See plates).

(c) Pneumoperitoneum with X-ray Findings—Much aid in the diagnosis of gallbladder disease is given by the pneumoperitoneal Roentgen ray. By this method the liver and gallbladder drop down into better position and can be shown more clearly by the Roentgen rays. The liver, and in many instances pathological enlargements and deformities, adhesions of gallbladder and gallstones can more easily be determined; also the kidney outline is much more distinct, which aids greatly in differentiating gallbladder conditions from other conditions in the right upper quadrant. It finds its greatest use in obscure cases. It is contraindicated in acute inflammatory conditions.

DUODENAL AND GASTRIC ANALYSES.

One of the more recent advances in the study of gallbladder disease is the attempt to obtain and study the bile from the biliary passages by means of the Rehfuss tube in the duodenum.

Meltzer was the first to advance this idea after a careful study of the physiology of the gallbladder and ducts. He felt that the more we know of the physiology of the biliary mechanism, the more we shall know how to deal with the pathological conditions. The knowledge of its physiology and an understanding of its disorders are of special importance to clinical medicine. Pathological conditions in themselves are the result of disease and unchangeable; and probably, by understanding the physiology better, we may be able to correct some early disorder of the physiology and bring it back to normal. He found that there is an involuntary relation between the gallbladder and the bile duct sphincter, the bladder contracting when the sphincter relaxes, and vice versa. He also found that magnesium sulphate, when introduced into the duodenum, would relax the sphincter and permit a flow of bile into the duodenum. Other substances stimulated this reflex, such as peptones, albumoses, and acid chyme from the stomach.

By some disturbance in this mechanism a stasis may be produced, and if often repeated or long continued will reduce the normal resisting power of the mucous membrane, which would make it a very favorable nidus for infection, especially if the person had just passed through or was passing through an infection. This primary stasis might be brought about by irregular diet; and after having its effect on the mucous membrane, if the latter is once infected, it becomes swollen and increases the formation of mucus, both of which tend to further stasis, and thus a vicious circle is begun. Dr. Meltzer suggested that, especially in some of the infectious conditions, the individual should be given food every two hours. This would aid in throwing out the bile and probably prevent infection because of the good resisting power of the mucosa.

Lyon was the first to try to put this into practical use by directly examining the biliary contents through a duodenal tube. The stomach tube was passed after giving a test meal and a portion aspirated every fifteen minutes until no particles of food remained. The patient is then turned on the right side and the tube passes on into the duodenum within usually ten to fifteen minutes. Under normal conditions the duodenal content will be free from bile and alkaline in reaction, and is a pearly white fluid with viscosity less than that of the gastric juice. Flocculi are suspended in it. When showing an infection this becomes turbid and contains many organisms, and may show bile.

After some of the duodenal contents have been aspirated, 50 cc. of a magnesium sulphate solution is injected to irrigate the duodenum. This is slowly withdrawn, at first only Mg. SO_4, ten to thirty minutes later mixed with bile, which, when coming from the gallbladder, becomes darker and more viscid. When continued, the bile direct from the hepatic duct appears.

The common duct bile is clear, with only a trace of mucus; the gallbladder bile is darker brown and more viscid; while the liver bile is thinner and a lighter yellow.

By determining the normal appearance of these it is quite easy to notice if there is much change in color; if there is much increase of mucus, or whether clear or turbid, microscopically; and by culture the presence of bacteria and cellular elements can be determined.

In acute cholecystitis we would expect to find bile with increased viscosity and many organisms and pus cells, especially in the empyema type. In the chronic infection, especially where gallstones are present, the contents may be quite clear, cultures negative, and only a few pus cells.

This examination means much more in the early cases of infection, not only in the diagnosis but in the treatment as well, for it prevents bile loaded with organisms from becoming stagnant and setting up a local infection. Thus in the cases of acute catarrhal jaundice, where often only the outlet or a portion of the common duct is filled with a plug of mucus, by washing the duodenum with mild antiseptics and irrigating with magnesium sulphate, drainage may be established and conditions restored to normal much sooner. Lyon claims that the course is shortened by fifty per cent in comparison with the old methods of treatment, and at the same time he feels that he has done the patient a greater good by continuing the flow of infected bile. Magnesium sulphate taken by mouth and passing through the stomach is found not to have the same effect on the biliary mechanism.

We have attempted a few experiments on dogs by placing a tube in the duodenum and irrigating with magnesium sulphate. With the first we obtained no bile which we could say was from the gallbladder. In one experiment we placed the tube, injected methylene blue into the gallbladder, and then gave the magnesium sulphate lavage and obtained the methylene blue by the duodenum.

The number of our operative cases having been previously studied with the duodenal tube is eight. This number allows of no diagnostic conclusions of value. Our studies have been of the physical, chemical, cytologic and cultural characteristics of the different biles. From these, as well as from our dog experiments, we have shown the correctness of the claims for the duodenal tube so far as emptying and collecting gallbladder bile is concerned. Our dog experiments show this; the emptying of a distended gallbladder while using the tube show it, and the cultural findings in bladder bile which correspond to operative cultural findings are convincing. One case of streptococcic suppurative cholangitis with a stone impacted in the common duct gave a hemolytic streptococcus culture with the duodenal bucket. This probably came from the common duct and in turn from the hepatic, even if a decided obstruction did exist where the stone was impacted. And because cholecystostomy often calls later for removal of the remaining diseased gallbladder, and because cholecystectomy does not remove the infection from the hepatic and common ducts, it remains probable that the duodenal bucket offers the best non-surgical treatment for these infected ducts. Smithies, Meltzer, Lyon, Sippy and others advocate this, and to us it seems as logical as repeated kidney pelvis irrigation in pyelitis.

GASTRIC ANALYSIS.

At present there is considerable discussion as to the condition of the gastric juice in gallbladder disease, some claiming a hyperacidity and others a hypoacidity. Probably some of the difference of opinion depends somewhat on the duration of the disease, the more acute conditions having a normal or hyperacidity, and then as it becomes more chronic tending to a subacidity. Because of this we have charted a few of the cases of gallbladder disease where a gastric analysis has been done. There does not seem to be any marked change from the limits of what our cases would show (if any, it is a tendency to subacidity), although I have one showing no free hydrochloric acid. This was only of two years' duration, according to the history. The one case mentioned previously, which revealed a cancer of the gallbladder at operation, gave a history of her trouble beginning only ten weeks previously. In this case the total acidity reached 74 in 45 minutes and the free hydrochloric 37 at the same time, both of which are within the normal limits.

With those of uncomplicated gallbladder disease, the total acidity varied between 52 (in two cases) and 16; free acid, 36 and none; combined, 20 and 10.

There were also a few cases associated with other conditions, such as ulcer, where the free acid reached 60 and total 70 to 80 acidity per cent. There is one case of gallbladder disease and chronic appendicitis where the total reached 80 per cent and the free hydrochloric 60 per cent.

So, although we have not a large number of cases from which to make such a report, they would indicate that the gastric secretion varies from a normal to a subacidity and did not seem to do so entirely according to the duration of the disease. This can only be determined, however, by carefully recording each analysis in gallbladder diseases until we have a large series.

Since the introduction of the fractional method for gastric analysis, considerable has been learned in regard to the action of the gastric juices. We are really at a place where what we called pathological findings are present in normal individuals, and it is only by more thorough study under normal conditions that we can better interpret pathological findings. At present we could place very little reliance on the gastric analysis to determine whether gallbladder disease was present or not.

There is some preliminary work on the cholesterin content of the blood and its relation to gallbladder disease, but nothing characteristic or definite has been determined.

PNEUMO-PERITONEOSCOPY.

We attempted using the peritoneoscopic method on dogs, and inserted a Braasch cystoscope to see what could be determined. We could see the gallbladder, liver, spleen, and some of the larger vessels, as well as the intestines, very plainly. It was a surprise in many ways, because the action of the intestines, as well as the minute capillaries over the intestinal wall, were very distinct. To date, however, we do not have the enthusiasm of Orndoff. We doubt that its usefulness warrants the annoyance and risk required except perhaps in a certain few obscure cases.

OPERATIVE FINDINGS.

This is the court of last appeal in diagnosis. Direct inspection and palpation will decide all advanced cases. Certain early but nevertheless permanently diseased bladders will be deceiving. Those still thin of wall, containing dark bile, emptying slowly under firm pressure, and without adhesions, will be difficult to diagnose. If the Rehfuss tube has already shown the "B" bile to be abnormal, then these doubtful cases should be cholecystectomized. Remember also that these should be reexamined with the duodenal tube after convalescence to determine whether the common and hepatic duct infections have cleared up. If not, repeated irrigations of this kind are advised.

TREATMENT.

(B) In the surgical treatment of this series of cases the tendency has been toward earlier prophylactic removal of all infected foci, toward the earlier diagnosis and operative treatment, with fewer drainages and more cholecystectomies. We believe there is no such thing as a harmless disease of the gallbladder. We believe that (1) nonoperative treatment is correct in but relatively few cases, while (2) operative treatment is the treatment of choice.

Nonoperative Treatment.—Under certain conditions nonoperative treatment may be warranted. In advanced heart disease or tuberculosis, or where surgery is absolutely declined, certain nonsurgical procedures are relieving and should be instituted. Rest in bed with low carbohydrate diet and free intestinal elimination, accompanied by hot abdominal packs and baths, is fundamental in such treatment. Various cholagogues and alkaline cathartics, urotropin even intravenously, deserve mention. The removal of all other foci of infection, and especially those in the abdomen, is indicated.

Recently the use of the Rehfuss tube to give duodenal irrigation, with magnesium sulphate solution, peptones and albumoses to relax the sphincter of the biliary passages, has seemed to deserve mention as a treatment measure as well as a diagnostic method. In the Journal of the A. M. A. for November 20, 1920, Brown reports witnessing the disappearance of a distended gallbladder while douching the duodenum with a 25 per cent magnesium sulphate solution. We have likewise seen gallbladder dullness of some considerable size disappear after such a procedure. We have also used it in a few cases of catarrhal jaundice with some apparent success.

These and many other nonoperative measures tend to relieve symptoms; but the gallbladder, once infected, is still prone to renewed attacks from extrinsic foci, and especially from apparently dormant foci within itself. The many supposedly cured cases of gallbladder disease which later show virulent organisms in the bladder wall, or in contained stones, bespeak a state of quiescence or inactivity rather than cure. Likewise they argue for earlier and more radical operative treatment at a time when it is safer and easier; and before the hepatic and common ducts, which cannot be removed, become permanently infected.

Operative Treatment. — This operative treatment, for purposes of brevity and completeness, we desire to consider under the following several headings.

1. Simple Cholecystitis—that is, where we have only an early infection, probably not involving the deeper layers of the biliary organs, without stones, with or without jaundice according to the edema of the ducts, and with a bladder which shows no certain gross pathology from the peritoneal side. These are the cases where the bile salts and cholesterin are concentrated, where there are many bacteria, pus corpuscles and slugs of mucus, producing a splendid stone-forming environment. These are the cases where the duodenal bucket may render treatment as well as diagnostic aid, if upon further use it proves as valuable as its advocates claim and as we have some cause to believe. Early and repeated drainage by means of the Rehfuss tube seems as logical as irrigation of the pelvis of the kidney in early pyelitis, providing all other foci of infection are removed. In any event, as a drainage treatment capable of frequent repetition it exceeds in value the more dangerous and confining cholecystostomy. Proving inadequate as a treatment, it further points to the advisability of cholecystectomy as an operation of choice superior to cholecystostomy.

2. Hydrops and empyema of the gallbladder, often with gangrene, are usually recurrent rather than new cases. The cystic duct is nearly or entirely occluded, and other com-

plications frequently exist. If there is no special contraindication, such as the general condition of the patient, these gallbladders should be removed. For mechanical reasons they may have to be aspirated first, and for septic reasons greater care exercised not to injure the liver and also to provide well for drainage. Leaving the outer layer of the gallbladder and suturing over it the peritoneal margins when the bladder is removed, aids materially in this protection when it can be carried out successfully. Also this care is an added guarantee in jaundice cases, where hemorrhage is to be feared. In addition to drainage tubes we have several times provided for later duct drainage in case of a subsequent serious cholangitis, by leaving a long artery forceps clamped upon the stump of the cystic duct. By this means the cystic duct could be released and drainage of the ducts begun in 48 hours if found necessary, by simply unclamping the forceps.

3. Chronic cholecystitis with or without stones represents the larger class of cases. Because of the involvement of deep layers of the bladder wall, not reached by simple drainage, and because in most cases the cystic duct is closed or functioning as poorly as is the bladder itself, cholecystectomy is here the operation of choice. The reappearance of stones, and the persistent postoperative sinus troubles in these cases where drainage of the bladder is done, present further argument for the cholecystectomy.

4. Stones in the Bile Ducts.—There are doubtless some cases where stones in the hepatic and common ducts can be milked back into the cystic duct and bladder or into the duodenum. It has not been my good fortune to have any such. The more formidable task of opening the duct and removing them is common. We have removed a stone in the hepatic duct through the stump of the cystic duct, somewhat enlarged by incision, with less operative effort and danger than to have opened the hepatic duct. In most cases we have found it necessary to open the duct primarily. One should remove the stone or stones, search in both directions for others, and then suture the duct, usually upon a soft rubber drain. Transduodenal removal of a stone lodged in the ampula has its place in bile duct surgery, but to date we have never had to use it.

5. When pancreatic disease accompanies disease of the gallbladder, a trying diagnostic problem confronts the operator. It is not permissible to resort to frozen sections to establish malignancy or no. The hardness, nodulation, lymph gland involvement and presence of secondaries speak for malignancy. The history of chronic infection over a long period speaks for pancreatitis. If a malignant pancreatic head exists, and the gallbladder is preserved to the degree that bile will circulate through it, this may be used to anastomose with the duodenum, stomach, or colon. In another place we are reporting such a case, where the colon anastomosis seemed the only possible course to pursue and the new outlet functioned at intervals, increasing in duration as the common duct was more and more occluded. There was no evidence of serious ascending infection, and the greatest disturbance was diarrhoeal stools. We have seen two other cases where nature had already performed such an operation. In one case two large stones had perforated the gallbladder and duodenum. The larger could not pass the ileocecal valve and caused death in about two weeks by intestinal obstruction. In the other case the stone had perforated into the colon and the gallbladder was draining into the same, although the cystic duct was here occluded and no bile was passing that way. In a case of simple pancreatitis, however, so often due to chronic gallbladder disease, cholecystectomy probably offers most, because it removes the chief focus of infection, causes sphincter relaxation (according to Judd and Mann), with better bile and pancreatic drainage. In many such cases the bladder is so atrophied that it would not serve for anastomotic purposes anyway, even if drainage through the ampulla of Vater proves insufficient, and therefore no harm is done in taking the risk of cholecystectomy.

6. Certain other complications, worthy of consideration here, do confront us. Foremost among these, perhaps, are adhesions. These may come alone from the previous gallbladder disease, but very often are due in part to the commonly associated appendicitis and less frequent pyloric ulcer. But while these certainly complicate the operative problem, they change in no way the principles of correct treatment for the gallbladder per se. Careful division of them to get adequate exposure, and later covering them, so far as possible, with omentum and loose peritoneum, is routinely best. Our experience with sterile vaseline and oils to prevent renewed

adhesions has not led us to recommend them.

Foreign bodies, such as fish bones, bullets, perforating stones, etcetera, may complicate, but again do not change the fundamental principles of treatment.

Finally, may we be pardoned for referring briefly to some features of the technic in gallbladder surgery? In operating upon cadavers one is impressed by the common simplicity and ease with which a gallbladder and an appendix may be resected. Both are easily removed, but upon the living dog or a human patient they are very unlike. This is not alone due to the troublesome respiratory movement which cannot be stopped, but more particularly to the inaccessibility of the field of operation.

Much discussion upon the incision of choice has occurred, and the different exponents of each method still debate the question. The underlying fundamentals are to get adequate exposure with the minimum damage to muscle and nerves. Our own favorite is a liberal longitudinal right rectus incision, converting it into an S if necessary by dividing the rectus fascia, anterior and posterior, at the upper angle, and extending the incision outward below. One may further divide the fibrous portion of the rectus opposite the umbilicus if found necessary. Partial division of the gastro hepatic ligament may also help. A pack of gauze over the dome of the liver further assists by a rotation of it so that the bladder and ducts present. Then, with the left hand of an assistant from the opposite side of the table to retract the soft viscera, one should begin to have a good view. Moderate traction upon the bladder is permissible, and this, together with some readjustment of packs and retractors, should afford an exposure which will adequately repay, in ease and safety of operation, for the time spent.

Here, as in other laparotomies not accompanied by acute peritonitis, a routine exploration should occur. The appendix in particular is liable. The common pyloric ulcer areas and the female pelvic organs should be checked up. In every case a systematic palpation of the head of pancreas, neighboring lymph nodes and the bile ducts should be made. This is best accomplished with one finger through the foramen of Winslow, where adhesions in the lesser sac often give a clue to the extent of involvement not otherwise detected. Drainage should follow in most cases, even in apparently clean cholecystectomies, because some postoperative escape of bile from liver punctures as well as divided ducts is common. If this is promptly removed by drainage, it may avoid a long postoperative dressing course because of a deep sinus. We have recently had the postoperative care of one such case from the clinic of W. J. Mayo. Such a drain is but temporarily needed, if at all, and prompt removal on the second or third day should cause no interruption in the convalescence.

CONCLUSIONS.

1. Careful, methodical history taking is of greatest diagnostic importance.

2. The duodenal lavage method of stimulating biliary secretion warrants encouragement as a nonsurgical treatment for gallbladder and bile duct infections. As a diagnostic measure its value is certain.

3. Most cases of chronic gallbladder disease should have a cholecystectomy. In a certain few the gallbladder may be reserved for anastomosis purposes, and when removal is contraindicated by general health conditions.

4. Many more of the early cases should have a removal when the duodenal analyses continue to show an infected gallbladder, and when the Roentgen examination is positive.

5. Prophylactically, other foci of infection, particularly the appendix, should be removed early.

6. Cholecystostomy is indicated in relatively few cases as an emergency measure and for thorough, prolonged drainage of infected liver and bile ducts.

	Male	Female	Total
Cases	41=27⅓%	109=72⅔%	150
Operated upon	13	45	58
Non Operative	28	64	92
Roentgen Examination	21	40	61
Gastric Analysis	15	39	54
Duodenal Bucket	2	6	8

Age	Number	Percentage
10—20	2	.01
20—30	10	.07
30—40	36	.24
40—50	38	.25
50—60	42	.28
60—70	18	.12
70—80	4	.03

	Number	Early	Late	Unknown	Recovery Good	Fistula	Recovery	Death	Reoperation	Reoperation Indicated	No operation
Cholecystotomy	15	5	10		5	4	2	4	3	2	
Cholecystectomy	26	11	14	1	24			2			
Cancer of Gallbladder	1	1						1			
Stones in Gallbladder	30	11	19		22	2	1	3			3
Stones in Hepatic Duct	2	1			1						
Stones in Common Duct	2	1	1					2			
Bladder Anast.	1		1		1						
Rupture of Gallbladder	1		1					1			
Peri-Cholecystitis	7	2	3	2	7						
Empyema	7	5	2	1	4		1	2			
Other Gallbladder disease	7	3	4		6			1			
Total Operations	58										

Causes of Deaths in Cholecystectomy Cases

Complications	Death	Time
Ulcerative colitis	Plus	1 year
Abscess Liver and Supp. Cholangitis	Plus	Few days
Cardiac Collapse	Plus	Few days
Ruptured Gallbladder. Peritonitis	Plus	Few days

Causes of Deaths in Cholecystotomy Cases

Complications	Death	Time
Pyloric ulcer. Strepto-pneumonia	Plus	
Hoemolytic Icterus	Plus	Few days

DUODENAL LAVAGE P C C C

No. Cases	A Bile	B Bile	C Bile	Culture	Pus	Mucus	Cells	P. Operative
M B	Plus	Plus	0	Motile Gram-Neg. Bacilli	—	Plus	—	Colon Bac. Staph
M S	Plus	Plus	Plus	0	—	Plus	—	
M G	Plus	Plus	Plus	0	—	Plus	—	
M L	Plus	Plus	0	0	—	Plus	—	
M J	Plus	Plus	0	Motile Bact.	Plus	Plus	RBC Plus	
M J	Tr	—	—	Non Haem Strepto & Staph	—	—	—	Strept & Staph A
M M	Plus	No thick Bile	Plus	Large number Gram Bac.	—	—	V few	
N	Plus	Plus	Plus	0				0 A
8	Dogs Post Operative Use of Duodenal Lavage.							

A SUMMARY OF 563 CASES OF GALLBLADDER DISEASE.*

Byron B. Davis, M. D., F. A. C. S., Omaha, Neb.

The advance in knowledge of the gallbladder in health and disease has been keeping pace with the advance in most other fields of surgical activity. As soon as gallbladder lesions began to be treated surgically the observations thus made possible began to modify the views formerly held. This has been another striking proof that the study of terminal pathology is of small value compared with the study of the early morbid changes.

As experience has increased and opportunities for observation have multiplied the ideas of the physiology and pathology have been greatly changed. The gallbladder, instead of being regarded as a reservoir for bile, is now known to be an ingenious mechanical contrivance to assist the current of bile in its passage from the small biliary ducts to the duodenum. It has been shown that no gallbladder is much to be preferred to a diseased gallbladder. It is the opinion of the writer that it has also been proven that a gallbladder sufficiently diseased to produce symptoms calling for operation will with very few exceptions, never again become a smoothly functionating organ.

The frequent opportunities to study the history, symptoms and physical signs and to compare the preoperative condition with the operative findings have greatly increased the accuracy of diagnosis. A definite diagnosis is now being made at a much earlier stage than was formerly possible, and proper operative treatment is often possible before neighborhood pathology has become so extensive that symptomatic cure is impossible. The end results are found to be better the more definitely the pathology is limited to the gallbladder itself.

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*Read before the Nebraska State Medical Association, Lincoln, May 9-12, 1921.

After finding that simple drainage was followed by a large number of unrelieved symptoms and incomplete cures the type of operation has been changed. I wish to quote from a paper read by the author before the surgical section of the American Medical Association in New Orleans in 1903, "After a gallbladder has been as profoundly diseased as it usually is when made the object of surgical attack it never regains its normal state and is henceforth not only valueless but on account of its defective drainage is constantly subjected to the risks of fresh infection." In the experience of the eighteen years that have passed since these words were written I quote them here as a fair statement of my present opinion.

The routes by which infection has been supposed to reach the gallbladder are: (1) An upcurrent infection from the duodenum, (2) microorganisms swept into the gallbladder from the liver through the hepatic ducts and up the cystic duct, (3) infection from the blood stream. Recently much doubt has been thrown on the possibility of infection resulting from the presence of microorganisms in the gallbladder cavity unless a lesion of the mucous membrane already exists or there is stagnation of the gallbladder contents. Therefore, we have come to regard the blood stream as the chief source of cholecystitis. This conclusion is given additional weight from the fact that the layers of the gallbladder wall most constantly invaded are not the mucous membrane but the submucous and muscular coats.

Recently the convincing experiments carried on in the surgical laboratory of Washington University by Peterman, Priest, and Evarts Graham lead me to believe that a heretofore unrecognized source plays an important, if not the most important, role in gallbladder infections. Graham had previously shown that in practically all cases of cholecystitis a hepatitis could also be demonstrated. Their experiments consisted of ligating the cystic duct and cystic artery of dogs with no hepatitis and under aseptic precautions injecting into the gallbladder through the wall with a very fine needle a broth culture of the bacillus coli in some cases and of a nonhemolytic streptococcus in others. The post-mortem uniformly showed cholecystitis and hepatitis in every case. The hepatitis was most intense in the portion in contact with the gallbladder and it was less intense the greater the distance from the gallbladder.

It was further found that cultures recovered from the liver in each instance gave the same microorganism as from the gallbladder and this was uniformly the same as had been injected into the gallbladder. They also showed that the only route in these cases by which the bacteria could have invaded the liver from the gallbladder was through the lymphatics. A very close anastomosis exists between the gallbladder lymphatics and the liver lymphatics.

If infection can be carried from gallbladder to liver via the lymphatics the converse naturally follows and infection may equally well be carried from the liver to the gallbladder. The liver serves as a catch basin for all sorts of waste products brought there by the portal vein. With these facts proven it naturally follows that this fourth route of gallbladder infection is of immense importance in the production of cholecystitis.

With this mode of infection of the gallbladder accepted it gives rise to a considerable revision of our ideas of gallbladder and liver pathology. Microorganisms carried by the portal vein are strained out by the liver and carried to the gallbladder via the lymphatics where they produce cholecystitis. From the infected gallbladder microorganisms are carried through the same lymphatic system to the liver where they set up a hepatitis. A vicious circle is thus established between the gallbladder and the liver each being constantly reinfected from the other. The longer the hepatitis exists the more fibrosis there is and when the fibrosis becomes sufficiently extensive cirrhosis supervenes as pointed out by the workers in Washington University laboratory. This seems a strong argument for early operation for cholecystitis. As drainage rarely fully relieves cholecystitis there seems here to be a powerful additional argument in favor of cholecystectomy.

In presenting a synopsis of the results of my labors in gallbladder surgery, I wish to apologize for the inadequacy of the records. In many cases no records were made and in those included in this report many points of importance are frequently omitted. In the 563 cases of which I have more or less complete histories the diagnosis, the treatment and the immediate results are recorded. It has been utterly impossible to follow up a sufficient number to be of any value in estimating end results.

Of the 563 cases in the series, 145 were males, and 418 females. This is about the same as the ratio usually given, three females to one male. No really satisfactory reason for this difference in the sexes has been given. Tight lacing, sedentary habits, and chronic constipation are certainly factors but do not seem sufficient. At least 75% of all gallbladder pathology originates during the child bearing age and it is claimed that 90% of the women who have gallbladder disease have borne children. It seems reasonable that many factors enter in and evidently more disturbing elements occur in women than in men.

In only 487 of my cases is the age recorded. The youngest patient was a little girl of 5 years and the oldest was a man aged 82 years and 6 months. By decades the ages recorded are as follows:

Under 10	years	1	.2 per cent
10 to 20	"	5	1.0 " "
20 to 30	"	77	16.0 " "
30 to 40	"	139	28.5 " "
40 to 50	"	116	24.0 " "
50 to 60	"	109	22.3 " "
60 to 70	"	32	6.5 " "
70 to 80	"	7	1.3 " "
Above 80	"	1	.2 " "

It is thus seen that 441 or 90.8% occurred between the ages of 20 and 60 years. In most of the older cases the symptoms had been present for many years, so it seems fair to assume that in the greater number the disease originated during the child bearing period.

Neither in the symptomatology nor in the treatment is any distinction made between cases of gall stones and simple cholecystitis. Of the cases of this series 335 are recorded as having gall stones and of these the condition was so marked that 246 of them are listed as also having cholecystitis. The diagnosis cholecystitis without gall stones is made in 228 of the cases. It is to be presumed that all gallbladders harboring stones were at some time infected. The presence of pericholecystic adhesions is positive evidence of cholecystitis and in 226 cases adhesions are definitely recorded. Unless the infection of the gallbladder wall is deep enough to invade the peritoneal coat, adhesions are not likely to occur. Thick walled gallbladders, definite fibrosis of the walls, the strawberry gallbladder, ulceration of the mucous membrane, empyema of the gallbladder, gangrenous gallbladders and some other conditions were sufficient evidence to warrant the diagnosis of cholecystitis. Many were subjected to microscopic study but many were only studied macroscopically.

Among the cases of the series were 46 deaths or a mortality of 8.17%. This includes carcinoma, 3 deaths; perforation, 4 deaths; complicated common duct stones and common duct stenosis, 6 deaths; acute cholecystitis, 3 deaths; gangrene of gallbladder, 3 deaths; very large pancreatic cyst with gall stones and massive adhesions, 1 death and anastomoses between the common duct and intestine, 4 deaths.

There were 499 cases diagnosed as gall stones, or cholecystitis without the serious complications above named with 22 deaths, or, a mortality of 4.4%. Among these 499 there were recorded 31 cases of empyema of the gallbladder. There were 255 cholecystostomies with 242 recoveries and 13 deaths, 5.1% mortality; and 244 cholecystectomies with 235 recoveries and 9 deaths, 3.7% mortality.

It is difficult to give correctly the cause of death in each case since in only a comparatively few was a postmortem allowed.

Deaths following cholecystostomy:

1. J. H., age 50, 10th day, Cerebral embolus.
2. Mrs. R., age 78, 5th day, Suppression of urine.
3. E. S. B., age 31, 7th day, 6 months pregnant, aborted on 4th day.
4. C. B. H., age 56, 3rd day, Severe shock, peritonitis.
5. M. L., age 54, 11th day, Pulmonary embolus.
6. G. F., age 37, 7th day, Pneumonia.
7. C. P. H., age 60, 8th day, Pneumonia.
8. M. A., age 26, 3rd day, Peritonitis.
9. M. R. R., age 54, 25th day, General Sepsis.
10. H. G., age 53, 4th day, Probably peritonitis.
11. A. P., age 60, 14th day, Exhaustion, Cholangitis.
12. A. B. T., age 63, 5th day, Probably peritonitis.
13. S. M., age 46, 6th day, Pneumonia.

Deaths following cholecystectomy:

1. H. P., age 57, 5th day, Heart failure.
2. D. S., age 59, 5th day, Peritonitis.
3. H. S. S., age 50, 12th day, Secondary hemorrhage.
4. C. E. B., age 48, 19th day, Cholangitis.
5. J. B., age 50, 8 hours, Shock.
6. M. B., age 56, 4th day, Acute dilatation of heart.
7. H. S., age 22, 10 hours, Shock.

8. R. K., age 43, 46th day, Subphrenic abscess.
9. E. T., age 61, 3rd day, Very fat, never rallied.

There were 45 secondary operations done. The primary operation was done by the author in a little over half of these cases. In 11 of the secondary operations gall stones were found either formed after the former operation or overlooked. Persistence of a biliary fistula following cholecystostomy was the reason for performing 12 of the secondary operations. In 10 of these cholecystectomy was done and in 2 the adhesions rendered operation so difficult that it was necessary to be content with simple drainage.

In one case a fistula was found between the gallbladder and the transverse colon. The viscera were separated and the hole in the colon closed by suture. The gallbladder was removed and recovery followed. In 4 other cases a fistula was present between the gallbladder and the duodenum. The same technique was followed and all recovered.

In 3 cases the pylorus was so narrowed and distorted by adhesions that obstruction was produced. In each of these cases complete relief was obtained after freeing the adhesions and removing the gallbladder.

In 14 cases pancreatitis was recorded associated with gall stones or cholecystitis. In one of these cases the pancreatitis was acute and very violent. This case recovered after prolonged drainage of the gallbladder. In most of the cases of chronic pancreatitis cholecystostomy was done, but in two cases it was thought best to remove the gallbladder and drain the common duct. Strangely, all of the cases recorded as pancreatitis recovered. It is probable that in most cases of gallbladder disease there is an associated pancreatitis, but usually a mild type which disappears after getting rid of the gallbladder pathology.

Among the cases of this series were 189 with lesions of other organs that were operated upon at the same time as the gallbladder operation. Of these 134 were appendectomies and in none of these was appendicitis recorded except when the appendix was manifestly diseased. A good many other appendices were removed as a routine. The other operations done at the same time as the gallbladder operations were drainage of a pancreatic cyst, gastroenterostomy, hysterectomies, herniotomies, salpingectomies, etc.

In conclusion I wish to mention a few points in connection with gallbladder surgery about which I am still somewhat uncertain. One of them is in reference to drainage after cholecystectomy. Several surgeons, notably Strauss, of Chicago, are advocating closing the abdomen without drainage after a clean removal of the gallbladder. This would be ideal if one could be sure no leakage would occur. It has not yet been possible for me to convince myself of the safety of this procedure but I am using a smaller tube and removing it sooner. There is no doubt that many cases would do admirably without drainage but if no drainage has been provided and leakage of bile occurs the result would be disastrous. Towards this whole question, I am trying to keep an open mind and as soon as there is enough evidence that the cystic duct can be securely ligated I shall be ready to dispense with drainage.

When common duct stones are present, I have of late removed the gallbladder just as is done when the common duct is not involved, believing that we can get just as efficient drainage by putting a tube into the common duct when the gallbladder has been removed as when it has been retained.

Another question of drainage is a very important one. Whenever there is a question of the presence of cholangitis it seems safer to drain the common duct than to trust to the infection of the ducts clearing up because of their natural drainage after the offending gallbladder is out of the way. At least two of my fatalities I believe might have been avoided if the common duct had been efficiently drained.

As the operation of cholecystectomy has become more simplified and is being done before too much neighborhood pathology is present, as the size of the drainage tube and the length of time it is continued become less, the period of stay in the hospital is shortened and I certainly believe the number of cases completely relieved is increasing.

Finally, I am not yet fully satisfied regarding the role to be played by the Meltzer method of draining the gallbladder for diagnostic and therapeutic purposes. There is little doubt that a good deal of valuable diagnostic information is gained by this procedure and not only is it possible to make a definite diagnosis in obscure cases but to determine the portion of the biliary tract that is bearing the brunt of the pathology. The Rehfuss tube seems destined to a much wider use as the value of this method of examination is more appreciated. It is also of great value as stated by Smithies in determining how soon a postoperative case may be considered free enough of infection to be safely permitted to leave the hospital.

Therapeutically, I am inclined to believe this form of treatment is not likely to prove permanently useful except perhaps in some very early or very mild cases with a minimum amount of gross pathology. In the cases much advanced the gallbladder has undergone changes that are irremediable and it seems impossible that the injection of a solution of magnesium sulphate, which at best only sets in motion the phenomena present during digestion, perhaps in a slightly accentuated degree, could be more than temporarily palliative.

I can conceive of this treatment being valuable in the presence of a very acute condition to tide the patient over until the condition is more favorable for operation. There is also a class of cases complicated by other diseases which render operation inadvisable where I believe the use of the Meltzer method might very wisely be used to carry them along and palliate their symptoms.

I wish to append brief histories of my oldest and youngest cases. It seems a strange coincidence that both of them had perforations and in my entire series there were only 3 other perforations.

Miss Mary Christensen, age 5 years, Benson, Neb.—She had been a fairly healthy girl till about ten months ago when she had a severe attack of "inflammation of the stomach", as stated by her mother. She was very ill for three weeks, with vomiting, abdominal pain and fever. After recovery from this attack she seemed as well as ever till Christmas time, six months ago, when she had a similar attack. After this attack she was well till five days ago when she had repeated severe chills, fever, vomiting and intense pain in the upper abdomen. Never jaundiced till the day before I saw her.

June 13, 1911, I saw her in consultation with her physician, Dr. W. H. Loechner. She had the appearance of being very ill. There was a good deal of abdominal distention and she kept her thighs flexed and complained of intense pain. The upper right rectus muscle was very rigid and I was able to detect a tender mass to the right of the umbilicus just below the costal arch. Her pulse was rapid and temperature 103° Fahrenheit. She was taken to Immanuel Hospital. Operation: 6-13-1911. A mass of adhesions was found about the gallbladder. As soon as the adhesions began to be loosened, bile mixed with pus began to flow out and a gangrenous spot which had perforated was found at the fundus of the gallbladder. Four rather soft light colored stones were next removed quite uniform, about the size of a hickory nut. The adhesions were numerous and to loosen them and remove the gallbladder was too serious an operation and her condition was so bad that simple drainage of the gallbladder was done. She made a prompt recovery, the temperature falling at once. She is now a girl of 15 years and I was recently informed that she is in perfect health.

Mr. N. J., age 82½ years, Plattsmouth, Neb., seen at his home with his physician, Dr. T. P. Livingston, Oct. 23, 1903. Patient describes definite attacks of gall stone colic followed by jaundice over 50 years ago. After several such attacks his condition improved and he went along comfortably till three years ago, and since then had had frequent typical attacks of pain in the gallbladder region radiating to the angle of the right scapula. Thirty-six hours before I saw him he was suddenly stricken with an overwhelming pain with collapse. Morphine gave some relief but vomiting continued and when I saw him he was greatly distended, the muscles were rigid, and he gave every evidence of peritonitis.

Operation: 10-23-03, at his home, Dr. J. S. Livingston gave ether and Drs. T. P. Livingston and E. W. Cook assisted. As soon as the abdomen was opened free pus stained with bile poured out and it was not walled off. Peritoneum was intensely inflamed with patches of fibrinous exudate. The gallbladder was found perforated but the stones had not escaped. Quick drainage was made. Apparent improvement followed for three or four days but death occurred about a week after the operation.

DISCUSSION.

Dr. A. C. Stokes, Omaha: We certainly have listened to a very excellent paper on this subject. I did not have the opportunity to study Dr. Welch's paper before it was read. It dealt more with diagnosis than surgical technique. But Dr. Davis' paper fills in the gap I thought would be covered in one paper. If I may be allowed, I will discuss the two papers briefly.

First, Dr. Welch discussed the symptoms of gallbladder disease with thoroughness and completeness and in great detail. I think it is well for us to keep in mind everything he said. I am convinced that little by little we are coming to the point where we diagnose gallbladder disease at a very much earlier stage than before. One of the characteristics of most gallbladder cases that I see is a history that would indicate there has been a pathology during long periods of time.

Second, I think the doctor discussed very thoroughly the reflex symptoms of the stomach. I wish to make only one statement in regard to that, and I should like to hear Dr. Welch's experience in that respect. I have never been able to make a definite symptomatology so that I could say, "This certain symptom in the stomach refers to the gallbladder." If there is such a thing, I should like to know what it is.

The stomach symptoms of one character or another, described by the patient as pain here and dyspepsia in other cases. They often say, "If I eat certain foods I get pain." Of course, generally speaking, with chronic gallbladder disease, whenever the stomach is full, we may expect stomach symptoms. The indefiniteness of the stomach symptoms characterizes gallbladder disease.

The next point is the physical signs, which are very important. We know what they are—tenderness over the region of the gallbladder—rigidity and acute pain.

My own experience with the X-ray has not been very good. I think we are finding more stones and gallbladder disease with the X-ray now than a few years ago; but I cannot place much reliance on it as a diagnostic feature in this condition.

Last week I had a case where the stones showed nicely, and we found them at operation. But I do not think in over 10 per cent of the cases we can rely upon the X-ray for gallbladder diagnosis.

The Lyon-Meltzer method is a refinement of technique that will, perhaps, develop something definite after a while. Whether or not we can depend upon it as a diagnostic feature, I am not convinced. We must consider the tube has a long, infected region to pass through before it reaches the gallbladder. I do not wish to say that in an attitude of being opposed to the procedure. We know such investigations often lead us to ends we least expected to reach. With all due respect to laboratory experiments, we must not let their findings interfere with the clinical data

I cannot accept with a great deal of credence Dr. Evarts Graham's results. It seems to me from the standpoint of ordinary physiology and anatomy, it must come through the main reservoir, i.e., liver or duodenum.

The last thing I wish to present is in relation to one of the points in Dr. Davis, paper—a little synopsis of the work we have been doing in the laboratory of the University College of Medicine, in determining what happens when we remove the gallbladder.

I have the history of the removal of the gallbladder in eight or nine dogs by one of our juniors (Mr. Bunten) in the Medical School. His problem was this: To open the abdomen, remove the gallbladder, and do whatever he wished with the cystic duct; close the abdomen without drainage and see what happened. In most cases we had a normal gallbladder and normal biliary tract to deal with.

Dog No. 1.—Wound healed completely on the eighth day. Dog normal. He cut the cystic duct and closed the abdomen tightly, without drain. The abdomen was opened on the twelfth day, and the stump healed, and no adhesions.

Dog No. 2.—Killed on the seventh day by mistake. The gallbladder region was examined and a few adhesions were present. The stump of the cystic duct was entirely closed.

Dog No. 3.—The cystic duct was crushed and ligated and closed without a drain. The wound healed. Operated upon on the thirteenth day and right kidney removed and stump of gallbladder examined and found healed, with no adhesions. The dog was living on the twenty-fifth day.

Dog No. 4.—Similar case of crushed cystic duct, with obstructions as close to the common duct as possible to get. In one there was a fistula, but no bile. The history of the other five is only a repetition.

Of these nine dogs, none died from peritonitis or had biliary fistula following. The cystic duct was clean and clear. The duct, if clamped and tied, will close itself and there will be no bile in normal gallbladders to do any harm.

Dr. A. I. MacKinnon, Lincoln:—In the first place, I do not think we should give it as the surgical consensus of opinion that cholecystectomy is the operation of choice in late infections of the gallbladder. I think it is pernicious teaching. I have done cholecystectomies for a good many years, but I am draining a lot I used to remove. I am of the opinion the reason it became fashionable was that we made a diagnosis of gallstones and operated and did not have gallstones to demonstrate, and we were getting in bad. That has happened more than once. Tell a patient he has gallstones, and it is hard to explain to the family that an infected gallbladder is as bad as a bunch of stones. Then we decided to remove the gallbladder and befool them.

Mention has been made of the walls of the gallbladder—that "once an infected gallbladder, always an infected gallbladder." The same might apply to an infected heart. If it were the focus of infection, there might be something in it. We learned an infected tonsil caused heart infection and removing the tonsil lets the heart muscle get back to normal. Most of our kidney trouble is due to foci of infection somewhere. There are cases of disease of the gallbladder when the gallbladder should be removed. This little girl was pretty good evidence, since the infection was acute enough to cause gangrene and perforation of the gallbladder. The gallbladder was drained. The patient got well.

Even in the hands of so expert an operator as Dr. Davis, he mentions cases that have died from peritonitis. I am skeptical on the peritonitis question. I have a strong suspicion that most of our intestinal trouble is due to the ether, which stops peristalsis for twenty-four hours. It is not hard to slow it for another twenty-four hours, and obstruction and distension results, and the patient is carried off with the label of peritonitis, when the contributing cause is ether. Many of those cases can be operated upon with local anesthetic and drained, which puts it in the minor surgical class. Of course there is bound to be a certain mortality, but we are adding to that by putting the patient under ether.

The peritoneum is the best friend the surgeon has. I have opened the belly with a local anesthetic in cases of general suppurative peritonitis, put the tube in the jejunum and have had the patient recover without more surgery.

I am thoroughly convinced ether is the chief cause of our mortality in belly surgery.

Dr. J. Frederick Langdon, Omaha:—Along the lines Dr. MacKinnon suggested about there being too many cholecystectomies, I had occasion to study a series of fifty-five operative cases extending over a period of seven months. The record showed the cases that did the worst were the acute cases. The chronic cases, as a rule, got along in pretty good shape; but if the gallbladder were removed in acute cases, they showed a stormy convalescence. The cases with gangrenous gallbladders nearly all died following cholecystectomy. Those that were drained did better. I am convinced the proper thing to do with a gangrenous gallbladder is to drain it. In the case of a pus appendix, it is sometimes better to drain. I think it holds true with gallbladders.

Dr. Davis mentioned biliary drainage. I have seen a good deal of this. I had the privilege of watching Dr. Sachs at close range in this work. It is not claimed a diseased gallbladder can be cured by this method. We all have cases where we remove the gallbladder and the patient has a return of symptoms. If you put the patient back in the hospital and reoperate, you are not likely to do much good. In this type the biliary drainage will often give relief.

I have a patient in whom I removed the gallbladder a year and a half ago, and six months later she had a return of trouble. The gallbladder was imbedded in a mass of adhesions and difficult to remove. It had her in the hospital again a year after the operation, and it looked as if I would be forced to do something in an operative way. This was about the time Dr. Sachs started this drainage. He drained the case. Relief was prompt at that time and she went home. She has been drained eight or ten times, and always with relief. She has never had a hard attack since the drainage. She still has attacks, and gets her drainage. Whether it is going to do anything permanent or not I cannot say. It has relieved her for the time, however, and I believe it is worth trying in these cases.

Dr. J. E. Summers, Omaha:—A number of years ago I read a paper before the American Surgical Association in which I advocated the non-removal of the gangrenous or threatened to be gangrenous gallbladder when the patient is in a serious condition. I think the principle is sound. Where I have removed gallbladders of patients in this condition, the mortality was high, and it is always so. Where I pursued a different policy the mortality was low.

I once operated on a case for Doctor Long, of Madison. The patient was an old lady with a gangrenous gallbladder filled with calculi. I split the gallbladder freely to relieve tension and establish drainage. She got well. If I had attempted more she would have died. Doctor Long removed the stones later through the open, properly protected wound. It is judgment that plays the successful role in gallbladder surgery of this type.

Those of us who have seen this thing,—gallbladder surgery,—from the beginning, I think understand the philosophy of it as far as it has been developed to date, and we know from bitter experience that it does not do to attempt radical things when the patient's resistance is lowered. Common sense should tell you that you will have a high mortality if you follow the theories that are presented by so many of our so-called progressive modern surgeons, —not that we should not be progressive, but it takes common sense and long bedside experience in this, as well as in other kinds of surgery to develop safe judgment.

Dr. C. A. Roeder, Omaha:—The acute gallbladder, whenever possible, should not be operated upon; the only exception to this elastic rule is the gangrenous gallbladder, which represents a small percentage of the acute infections. Unlike appendicitis, cholecystitis involves neighboring tissues very rapidly and often times cholecystectomy removes only a portion of the pathology, the hepatitis and pancreatitis remaining. This accounts for so many poor results and is a most urgent plea for early cholecystectomy. Whenever you remove a gallbladder expect no more than its relationship to the entire morbidity present.

Relative to gallbladder dyspepsia, Christopher Graham, twenty years ago, emphasized the irregularity of the symptoms as being diagnostic; this is the very opposite of ulcer dyspepsia.

The use of the drainage tube is not the cause of the great number of adhesions always found in this area. In twenty-four hours it is practically outside the peritoneal cavity leaving a small tract, as a vent for possible leakage. A small drain does very little harm; the trauma from packs, instruments, sutures, traction, oozing of blood and the peritoneal suture of the abdominal wall must first be modified considerably before all of the postoperative morbidity can be placed upon the use of the soft drainage tube.

Dr. B. B. Davis, Omaha, Closing:—I am much pleased with the discussion, and feel most of the points taken are well taken.

The point made by Dr. MacKinnon as preferring cholecystostomy, I shall not devote much time to, because the paper covers my opinions on the subject. I think when there is an infection of the gallbladder, there is almost always more or less of a general infection of the biliary tract, and sometimes of the pancreas, as well. If the symptoms are sufficiently severe that the patient comes to operation, I think that is the case. I believe it is true the gallbladder acts as a focus of infection for the whole tract. In removing it, we remove the chief focus and give the other portion a chance to drain and become sterile. In taking out the gallbladder, we are taking out the least valuable part of the biliary tract.

With reference to the points raised by Drs. Summers and Roeder: When there is a real bad infection, especially when there is gangrene of the gall bladder, I think the quicker we can get in and out with the least amount of damage, and get drainage, the better it is. My mind was on the ordinary infections, but it has been my custom to get in and get drainage. I do not mean to say all of these cases will give trouble unless you take out the gallbladder, because I think cholecystostomy operations are followed by a good percentage of cures. But when a particular type of operation is followed by conditions which give rise to the necessity of further operation, and when we later take out the gallbladder and the patients get well, it is pretty definite evidence.

GASTRODUODENOSTOMY VERSUS GASTROJEJUNOSTOMY.*

Henry B. Boyden, M. D., Grand Island, Neb.

There is probably no such well established and frequently performed operation which has been adhered to by the leaders of surgery, with apologies, as gastrojejunostomy.

It has long since been proven physiologically and mechanically nonoperative, excepting in cases of pyloric stenosis.

Yet, we find our leading surgeons performing gastrajejunostomy even for small ulcers in the face of statistics indicating a high percentage of failures.

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*Read before the Nebraska State Medical Association, Lincoln, May 9-12, 1921.

In a gastrojejunostomy, we are performing a truly major operation for which hazard there should be a better prognosis than we are able to offer our patients.

It is the opinion of the writer that the dissension among medical authorities resulting in the two viewpoints, the medical treatment of gastric ulcer and the surgical treatment of gastric ulcer, has as its foundation, inadequate and improper surgical treatment of gastric ulcer.

It is the purpose of this paper to emphasize the necessity of excising the ulcer and to advocate a plastic operation at the pylorus for those cases requiring additional drainage, as a more logical procedure than gastrojejunostomy.

Gastrojejunostomy was first introduced and perfected as a drainage operation and the lowest point of the stomach was selected, however, since the advent of the roentgenogram, it is generally accepted that any method of exclusion of the pylorus, excepting excision, has practically never been successful and further, with the peristaltic waves, there is no low point to the stomach and the current of pressure and peristaltic rhythm are focused on the pylorus.

Balfour's statistics on 2875 operations for duodenal ulcer give a total mortality of 1.6 per cent. 12.7 per cent of the patients who had hemorrhage before operation had hemorrhage after operation. .9 per cent had hemorrhage after operation who did not have hemorrhage before operation.

Statistics on end results of gastrojejunostomy taken from articles by Smithies who was formerly gastroenterologist at the Mayo clinic and is now at Augustana Hospital, Chicago, on 177 cases chosen arbitrarily out of 2360 cases who returned by request for examination, give a percentage of much below 50 percent complaint free patients, and it is interesting to review the statistics each year in the past ten years in different papers on gastric and duodenal ulcer treated by gastrojejunostomy and see the decrease in percentage of complaint free patients in the statistical reports.

It is true that the addition of excision or cauterization of the ulcer to gastrojejunostomy has materially helped the cases, especially in the decrease of hemorrhage subsequent to operation, and I believe this alone has cured many cases and is the most important step in the operation for ulcer.

A gastrojejunostomy relieves the pain of gastric ulcer because it lessens the peristalsis and the pain of gastric ulcer is due to excessive peristalsis being sensed by the inflamed ulcer and the operation of gastrojejunostomy is not an effort to remove the pathological cause.

Now, before introducing what I think the logical point of attack for the cure of ulcer, it will be well to consider briefly the etiology, pathology, physiology and anatomy of ulcer and of the pylorus.

A certain percentage of cases can be definitely cured by correction of remote foci of infection and a Sippy diet or similar alkalinization; and to illustrate this point, I will mention a case of ulcer of stomach treated by a medical man and remaining complaint free for four years, symptoms then recurred with vigor. Having at this time a very severe case of pyorrhea and failing to get relief from Sippy's diet, the patient having the teeth extracted immediately responded to the diet and has been complaint free for one year. In this case there was marked pathology in the teeth and radiography indicated a classical duodenal ulcer.

In the majority of cases we do not find enough remote pathology where we can expect such results and the ulcer is of such standing and severity that surgery is necessary.

As Dr. Stokes pointed out in 1916, the majority of cases occur in a radius of one inch from the pylorus and the pylorus is a rather fixed point in the gastrointestinal tract, with no mesentery, and no vermicular movement and hard food is forced against the pylorus by peristaltic action. Further, he called attention to the glands of Brunner located only in this region of the gastrointestinal tract and lined with a high columnar epithelium very easy of infection and that it is conceivable that with circulatory disturbances these glands may at times form a locus minoris resistentiae. The sphincter of the pylorus controls the outlet of the stomach and when the chyme reaches a certain acidity it relaxes and the stomach empties.

Dr. Ivy summarizes the chief theories of ulcer:

First—Infection of mucous membrane through the blood from a focal infection is the primary factor and source of reinfection.

Second—the corrosive action of gastric juice on mucosal cells which have had their normal resistance against acid peptic digestion diminished in some way prevent healing.

Third—A localized trophic disturbance is responsible for the chronicity of ulcer.

Fourth—A general condition of autolysis plays the initial role.

Bolton's theory that all ulcers are acute and the majority of them heal and the chronic ulcer originates from the acute is good logic as many factors produce chronicity.

The points to be accomplished in the surgical treatment of ulcer of the stomach are:

First—Removal of remote foci of infection.

Second—If operation is decided on; removal of the area of necrotic tissue; excision or cauterization of the ulcer.

Third—Adequate drainage of the stomach and the two factors to be considered in the control of this are the size of the outlet and the action of the sphincter muscle.

To accomplish these points it is necessary to individualize each case and the procedure is dependent on the individual operator's surgical judgment. One has the knowledge gained by radiography as to peristaltic action and as to the size of the outlet and at the time of operation one has his judgment as to the size of the outlet.

If the ulcer is small approaching the acute type excision may suffice.

Next, it may suffice, in addition to excising the ulcer, to make a submucosal division of the sphincter muscle, which will for a few months be paralyzed and increase the freedom of drainage of the stomach. In conjunction with this type of operation, I wish to call attention to Horsley's analogy of curing an ulcer ani by division of the rectal sphincter.

With a slight pyloric stenosis it may suffice to perform a Heineke-Mikulicz operation.

In the more chronic cases and in the larger ulcers where it is evident that more adequate drainage of the stomach is necessary one must again be more radical and perform either the Horsley or Finney operation, which differ slightly, and it is these operations which I will describe more in detail and which I believe are the future radical operations for ulcer of the stomach.

The operation of pyloroplasty, according to the method of Heineke-Mikulicz, is performed by an incision two cm. in length following the natural curve of the canal, with its center at the pylorus and closed by sewing up transversely, but the objections to this are that the incision is too short, adequate drainage is not provided, and adhesions are apt to form fixing the pylorus abnormally high with resultant pyloric obstruction. The incision in most cases cannot be prolonged in the duodenum unless the latter is mobilized as the tension on the suture is too great and this operation is only applicable to benign contractures following healed ulcers.

The Finney operation as Warbasse states is one of the most useful operations in gastric surgery and is destined to play a larger role than has as yet been its lot, and is the logical operation when the greatest amount of drainage of the stomach is necessary and is the logical operation for the more pronounced types of ulcer, especially where all pylorospasm is to be removed. In the performance of this operation it is necessary to mobilize the duodenum and adhesions must be liberated and the delicate layer of peritoneum in front of the right kidney to the outer side of the descending portion of the duodenum divided, which allows displacement of the duodenum inward and four inch incisions of the bowel and stomach in the same manner as a lateral anastomosis, excepting these are connected above at the pylorus.

A surgeon who has as much experience with this operation as with gastrojejunostomy should find it just as easy to perform.

The operation suggested by Dr. Horsley can be performed at a saving of time and does not permanently impair the pyloric sphincter and it is not necessary to mobilize the duodenum.

An incision is made on the anterior surface of the pylorus extending one inch on the duodenum to a point two inches on the stomach, if the ulcer is on the anterior surface extending along its lower border. If the ulcer is on the posterior wall the wound is retracted and the ulcer excised and the walls approximated. When the ulcer has been removed or pockets and contractions remedied, the incision in the pylorus is closed transversely resulting in an enlarged rectangular outlet to the stomach.

Advantages of this operation:

It removes the obstruction and the pathological condition and permits the normal resumption of stomach function.

The pylorus is put at rest, which is the part most concerned in contraction and relaxation. This is accomplished by the two inch incision in the stomach. The function of the pylorus is not permanently destroyed, the stomach wall which is brought over acts as a link between the ends of the sphincter and in course of time, usually a few weeks, the sphincter resumes its action, however, being enlarged it cannot become spastic as it was before the operation.

It is more simply performed than the Finney operation.

Advantages of the Finney or Horsley operation over gastrojejunostomy are:

First—The pylorus is put at physiological rest and as the food persists in leaving the stomach at the pylorus, that is the logical place to make adequate provision for it to leave the stomach.

Second—Exposure is made of the ulcer bearing area and a thorough vision of the diseased area is given which enables us to remove the diseased tissue and all pockets and contractures can be dealt with.

Third—No jejunal ulcers occur as sequelae. There is no danger of vicious circle and the jejunum does not have the acid chyme precipitated into it.

The advocates of gastrojejunostomy are emphasizing the necessity of excising or cauterizing the ulcer and the surgeon cannot remove the ulcer bearing tissue nor the pockets and contractures unless the pylorus is incised and retracted and seen, and when one does an exploratory operation one cuts in and it is necessary to cut into the plyorus to have a complete knowledge of the pathology. If this is necessary, if it is possible to repair the wound through this incision alone, there is no need of opening the stomach for a gastrojejunostomy which will not work unless the pylorus is closed and this opens unless there is a pyloric obstruction.

William Mayo, in Surgery, Gynecology and Obstetrics, February, 1921, states, "The results of excision of large ulcers, because of hemorrhage, with end to end union of the duodenum to the stomach by means of catgut, have been so excellent as to indicate an early return to the more localized treatment of certain duodenal ulcers, as advised by Finney, without recourse to gastrojejunostomy."

In conclusion: I wish to state that the treatment of all ulcers, chronic in type, is surgical.

The most important factor in the operation is excision of the ulcer.

An enlargement of the pylorus, the natural outlet of the stomach, is the logical point to provide drainage for the stomach.

Chronic remote foci of infection must be remedied.

The indications for gastrojejunostomy are cicatricial stenosis of the pylorus and duodenum so marked that the duodenum cannot be returned to normal.

Subacute perforation of the duodenum and leucocytic infiltration to such an extent that the sutures will not hold.

In obstruction of the pylorus due to inoperable malignant growth.

DISCUSSION.

Dr. Karl Connell, Omaha:—The writer, in so fully presenting his subject, does not sharply draw the issue between gastraduodenostomy and gastrojejunostomy. Each operation, disturbing as it does the time and route of food passage, is not to be lightly undertaken, and in simple ulcer treatment had best be reserved for those cases which in their chronicity and ulcer deformity have proven themselves not amenable to medical measures. Neither operation presents any unique advantage over the other in the attack on the ulcer either by cautery or sharp excision. Thus the issue sharply defines itself into two counts, first, which operation is the safer, and second, which yields clinically the better result.

Theoretically the duodenal operation would seem the simpler, and on the dog with loose duodenum it is simple. But on the human subject in order to obtain the necessary mobility of the duodenum, much dissection of the retroperitoneum is necessitated and a very careful suture technique is required. I have been profoundly impressed with the insecurity of a Finney pyloroplasty in seeing a partially completed suture line tear open under my eyes as the stomach convulsed in attempted vomiting. The jejunum on the other hand when anastomosed, is free to follow the powerful movement of the stomach. Nor does this anastomosis to the stomach open or disturb retroperitoneal tissue. Of the two procedures, gastroduodenostomy in my own hands has proven technically more difficult, has been attended by more shock, and has been more frequently beset by after complications such as right lower lobe pneumonia. I regard the duodenal operation as much the more hazardous.

As to the second count, namely which gives the better function. While anatomically gastroduodenostomy would seem the less deforming operation yet surgical procedure should be considered from the physiological rather than the anatomical side when dealing with a physiological defect such as the peptic ulcer complex. From this aspect the purpose of stomach drainage, as much is left as is to be desired achieved by gastrojejunostomy, draining the acid chyme from the perimeter of the food mass in the first receiving reservoir namely the cardiac segment of the stomach rather than from the pyloric pouch. Also by this drainage three sphincters are bypassed, to-wit, the incisure of the stomach, the pylorus, and the lower duodenal segment.

Gastroduodenostomy on the other hand merely negates sphincter control at the pylorus and leaves the other two sphinteric segments intact. More and more I have reserved operative procedures on the pyloric and duodenal segments to patients presenting pure pyloric stenosis or to those where direct attack on ulcer and new growth is indicated. In the average case demanding gastroenterostomy for stomach drainage, much as is left to be desired from any operation. I have observed the best clinical results by the short loop anastomosis of the jejunum well into the cardiac segment by posterior gastrojejunostomy.

Aside from the above minor differences of opinion, I am in full accord with the writer and express my appreciation of his paper.

Dr. C. A. Roeder, Omaha:—I have been interested in Dr. Boyden's experience and know that he has been more fortunate than some of us with the various plastics on the stomach and duodenum. Any plastic which takes in the pyloric sphincter is an anastomosis and one form of a gastroenterostomy. The main difficulty in performing these operations is to obtain sufficient mobility of the duodenum, which mobility is also essential after the operation. Adhesions always form where any portion of the gastrointestinal tract is immobilized which is exemplified by about fifteen various types of gastroduodenoplastics which I have seen operated upon, later requiring a gastroenterostomy. These plastics all sound more physiological, but are generally not so practical as a successful gastroenterostomy.

Dr. B. B. Davis, Omaha:—To listen to these last two gentlemen talk, although I have strong views on the other side, they almost convinced me. They are very plausible talkers.

The gastrojejunostomy has done a whole lot of good. I think it is going to continue to do so, and I expect to do a good many of them myself before I die. At the same time, there are some defects physiologically in a gastrojejunostomy. The fact that even under the best men, they concede 6 percent duodenal ulcers as the result of this operation, and also concede the duodenal ulcer is worse than the condition for which the original operation was done, is one of the important drawbacks.

In regard to postoperative symptoms: We get a good many cases where the patient has a lot of burning pain and sometimes several bowel movements every time he eats, after gastrojejunostomy. I have seen several of those cases. This is not a theory—it seems to be a fact. The fact the jejunum, so far as we know, has been accustomed to alkaline contents, and all of a sudden has forced upon it an acid secretion, it is no wonder it rebels.

I concede all that has been said in regard to the difficulties and oftentimes bad results of the plastic work about the pylorus. We do often get adhesions. There are cases where we have trouble in future, and lots of Finney operations have to be reoperated upon.

I think we are on the right physiological track. I believe we should consider this as a local condition and get rid of the ulcer. If we would content ourselves to do that in such a way we do not leave a contracted condition—of course get a stenosis—that's the kind we get best results by operation. I think the excision or cauterization should be carried out in such a way as not to narrow the orifice. I believe we would do better to let the case alone and not do a gastrojejunostomy.

I think within two years there is going to be a big battle between the surgeons on this particular point. We must decide which is the better method of procedure. There are enough facts so that we have something to reason on. I hope we will get together and have a nice little hot argument for the next year or two. I think the battlefield, so far as the abdomen is concerned, will be on this particular subject.

I am not satisfied with the gastroenterostomy. I concede the weak points of the other. I think we are coming to the time when the local attack of the ulcer will be the operation of choice.

Dr. A. C. Stokes, Omaha:—One important point made today is that chronic gastric ulcer is a surgical condition, first, last, and all the time. I have repeatedly emphasized that point.

I have done a good many gastroenterostomies. I do not consider it much more than a minor operation, but it does not do the business many times, and, I think my colleagues will say the same thing. Patients come back and are not cured. The surgical process is not complete yet.

In the last year I have done four operations of which I want to speak as a text to answer some of the questions. There were two pyloroplasties for ulcers of duodenum on anterior surface where I could get at them. In one case I removed the ulcer, and in the other, I cauterized the base and removed the biggest part of the ulcer. I cannot see that a pyloroplasty is such a difficult operation. Of course, "two swallows do not make a summer," but these went off fine. One patient lives next door to me. I was fearful she would not make a good recovery, but she doesn't complain at all. The other is a teamster who has made a first class recovery. Maybe we have not yet developed quite the correct technique for pyloroplasty, but the idea appeals to me as the proper method of procedure in all cases where it is possible.

The others are two cases of ulcer of the lesser curvature. One is in the hospital and the other has just left it. I removed the whole ulcer and sewed the incision up lengthwise, increasing its length, and did not do a gastroduodenostomy. Both of them had a stormy convalescence. The stomach filled up right away. Both suffered from acute dilatation of the stomach. They had no temperature, but nausea and vomiting. Both recovered. Both were good surgical risks.

I do not know what the future will bring forth, but in those two I have done the main thing: gotten rid of the ulcer.

Dr. Charles O'Neill Rich, Omaha:—Surgery has fallen into disrepute by the indiscriminate use of gastroenterostomy. If there were any symptoms pointing to an ulcer, a gastroenterostomy was done regardless of whether an ulcer existed or not. We are only justified in doing a gastroenterostomy when an ulcer can be demonstrated. The important thing is removing the ulcer area and accurately approximating the tissues of the stomach. In a small ulcer where there is not much contraction, it seems to me the simple removal of the ulcer is sufficient. A gastroenterostomy is not necessary. A gastroenterostomy does not appeal to me from a physiological standpoint, because we are throwing an acid medium into the jejunum which is not prepared for its reception.

I think the last word has by no means been said, as far as surgery of gastric ulcers is concerned. Personally, I believe it will be some kind of a simple plastic operation of the pylorus.

There has recently been reported in the British Journal of Surgery, some experimental work done with the use of the Ramstedt operation in gastric ulcer, it is surprising how much the caliber of the pylorus is increased by this operation and in many cases this simple operation will without doubt be sufficient.

Dr. Delmer L. Davis, Omaha:—I think the excuse for our existence is the patient. The patient seeks clinical relief. The question of recovery of all these cases requiring better gastric drainage is both clinical and operative.

I believe Dr. Davis will accept my correction that not six, but nine percent have gastrojejunal ulcers following gastroenterostomies. Practically no percent exists of gastric drainage following a Finney or Horsley operation. If gastric drainage is indicated, a gastroenterotomy should not be done if possible to do a pyloroplasty of some type. The only contraindication to a pyloroplasty is a cancerous mass, old and extensive adhesions, infiltration to make stitch holding doubtful or the inadequacy of the operator to deal with the technique.

Dr. Boyden. Closing:—I remember in my last year at medical school, eleven years ago, when we would question the surgeon performing a gastrojejunostomy he would have many apologies.

I think that a medical man can pin most surgeons down on the results of gastrojejunostomy.

Eleven years to my personal knowledge have elapsed and gastrojejunostomy is the prevalent operation with surgeons.

The particular difficulty in performing a gastroduodenostomy is that you are operating in a more vascular part of the stomach than you are in a gastrojejunostomy.

If the peritoneum is divided over the descending portion of the duodenum, you can replace the duodenum two inches to the left which relieves all tension on the sutures when you perform the gastroduodenostomy.

In reference to the acid chyme being dumped into the duodenum that is the physiological route and there has been difficulty in having the acid chyme emptied into the jejunum directly.

As far as its being more difficult to perform a gastroduodenostomy than a gastrojejunostomy, I can report only three cases and the extent of my surgical experience is not enough to draw many deductions. But to relate my first experience will help clarify the operation.

In the first case that I performed the Finney operation, I mobilized the duodenum so as to be able to do it with more ease. It required only one or two minutes. I think until we have much experience it would be well to mobilize the duodenum first, because the operation can be thus performed with more ease. The operation was performed with such ease that in addition to the gastroduodenostomy, I removed the appendix and gallbladder, there being a marked pericholecystitis with cobweb adhesions and a chronic appendicitis. I did this because it was manifest that it was necessary and because I felt that it could be done with safety.

The entire operation consumed one hour and twenty-five minutes. The date of this operation was August 24, 1919.

ACUTE INTESTINAL OBSTRUCTION.*

A. L. Cooper, B. Sc., M. D., Morrill, Nebraska.

The main object of this paper is to emphasize the great necessity of early, accurate diagnosis, and of prompt and efficient treatment in the management of cases of acute intestinal obstruction.

Acute intestinal obstruction as an entity occurs rather rarely in general practice, and this probably accounts for much of the lack of appreciation of its gravity and importance, both on the part of the patient and the physician. Appendicitis has become so well known, and its management so well worked out that, once the diagnosis is made, proper treatment is easily and rapidly applicable. In other words, the laity and the profession have come to a proper appreciation of its real nature and importance, and as a result, many lives are saved by early operative interference.

Although acute intestinal obstruction is, and should be from the beginning, a surgical condition, it is not the surgeon, but the general practitioner who first sees the cases, and on whom rests the responsibility of saving the patient's life. This he can do through ability to recognize the first symptoms of real organic obstruction, and realizing the importance of immediate and effective treatment, bring operative relief to the patient as effectively as is now done in appendicitis.

Without surgical interference most cases of acute intestinal obstruction die within seven to ten days. In the case of volvulus death may occur in forty-eight to seventy-two hours, (Da Costa). The more reliable reports of operated cases give the mortality rate of sixty to seventy-five percent.

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*Read before the Scottsbluff County Medical Society, January 21, 1921.

When we come to consider the etiological factors in obstruction, the pathology present, and the physiology of the gastro-intestinal tract, we can easily understand the practically one hundred percent mortality of untreated cases, but it does not explain why operative results are not better than above stated. Is the fault due to lack of proper surgical judgment or technic, or is it because this means of relief is left as a last resort, and reserved until too late?

The following case reports are taken from cases that have come under our personal observation, and are taken at random to illustrate the more common causes of acute obstruction. Incidentally, they illustrate the usual progress and results of intestinal obstruction as it is managed. They also point the direction in which we may work to effectually reduce the mortality rate. The first three cases were seen at the University Hospital and are given briefly; the fourth occurred in practice recently.

Case 1.—A man 61 years old with past history negative, except for a left inguinal hernia which had been strangulated a number of times during the past few years, but which had been quite easily reduced each time. He gave a history of unsuccessful attempts at reduction by taxis made eighteen hours before. The patient was in extremis. He was emaciated, "dried out", and had been vomiting every few minutes until a short time before entrance, since which time he had been more comfortable, but more distended. Complete suppression of urine had been present for eighteen hours.

Immediate operation was decided upon, to be done under ether anaesthesia. Hypodermoclysis was begun with the operation; one ounce of ether was used during the operation. The hernia sac was found filled with loops of the lower third of the ileum, part of which was gangrenous. Resection of eighteen inches of the ileum was done and an end to end anastomosis made. The patient died fifteen hours later in collapse. Autopsy showed the gastro-intestinal tract practically empty, the anastomosis in good condition but the intestines distended in paralytic ileus.

Case 2.—A man of 54 was brought into the hospital in extremis, with a history of being sick four days. His past history was negative except for several attacks of "stomach trouble" none of which were severe. The present complaint began with pain in the abdomen, followed by persistent vomiting. He gradually grew worse. A doctor was called the third day who made a diagnosis of appendicitis and advised operation, which was refused at first. The patient was a man of medium build and fairly well nourished, but was dried out, very weak, nervous and partly comatose. The pulse was rapid and thin. The abdomen was markedly distended. Vomiting occurred at one-half hour intervals. The breath and vomitus had a fecal odor. There was complete suppression of urine.

Immediate hypodermoclysis was begun and operation done under local anaesthesia. A Meckel's diverticulum was found, the distal end of which was bound down to the mesentery on the left with a strong band of adhesion, forming a loop through which the coils of the ileum had passed, forming a mass of black and distended intestine resembling a rosette. Cutting the band freed the coils. Thirty inches of the ileum was gangrenous, and was resected, using a Murphy button for anastomosis. No improvement was secured and the patient died twelve hours later. Autopsy showed the anastomosis in good condition and the intestines empty but greatly distended.

Case 3.—A woman of 48, large and fleshy, entered the hospital for operation on a large umbilical hernia. She gave a history of hernia following a pelvic operation several years before. She had had several recent attacks resembling obstruction. Examination of the urine showed a large amount of albumin and granular casts. Her general condition indicated severe kidney lesions, and she was considered a poor operative risk. While waiting for a possible improvement in the kidney condition, an attack of severe abdominal pain with persistent vomiting began on the second day.

An immediate operation was decided upon. The patient began to show signs of coma while on the table. One-half ounce of ether was used during the fifty minutes of the operation. A mass of small intestine was found densely adhered to the omentum, peritoneum and walls of the hernia sac. The mesenteric circulation was fairly good, and the obstruction was apparently relieved after complete dissection of the adhesions. The patient died in coma a few hours later. No autopsy.

Case 4.—A man of 41, thin but of previous good health, was seen first on June 21st. Past history of severe attack of "stomach and bowel trouble" one and a half years ago, lasting three or four weeks, which was said to have been accompanied by some fever and much vomiting part of the time. When seen the patient had complained for six hours of severe pain in the left side of the abdomen with nausea and vomiting every few minutes. He had had a good bowel movement a few hours before the pain began. He had not urinated or passed any gas since. Examination showed a pulse of 80, temperature of 98 and respiration of 25. The abdomen was slightly distended and a tender point was present two inches to the left of the umbilicus and slightly above. Auscultation gave peristaltic sounds but not of a normal nature. There was the gurgling sound of confined gas, and not the rushing sound that is heard when gas is moved along the bowel. Relief was obtained in two hours after several large enemas, which were followed finally by a bowel movement of partially digested food material.

The patient was seen again July 25th in a similar attack but of greater severity. Operation was advised but refused. Morphine and atropine were administered per hypo. and the enema treatment repeated. Relief was again secured. August 3rd, I was again called to see the patient in an attack. Apparent relief followed in three hours. Six hours later I was called and found him in distress again. Relief was obtained as before. The patient was advised that he might expect further attacks, that no permanent relief could be secured without operation, and that delay would be very dangerous.

The next heard of the patient, he had been operated upon on August 31st, and the following report was given by the surgeon:

> "Man, 41, very poorly nourished, vomiting frequently, marked pain on left side of abdomen with tenderness on pressure. First attack one year ago, in bed three weeks, did not work for three months. Improved with treatment but has had five attacks in the last six months, recovering from all except the last one which has persisted. Wassermann reaction negative, leukocytes 10,500, haemoglobin 75, pressure S.130, urine negative and heart performing perfectly. X-ray of colon negative, visualizing mixture showed stomach filled all right with good duodenal cap. One hour later showed stomach same with marked dilatation of the upper part of the small bowel ending abruptly and giving the typical picture of obstruction.
>
> "Operation showed a very dense band of tissue surrounding the small intestine about 24 inches down the jejunum. The bowel was apparently closed entirely with no other pathology than the band which when loosened relieved the pressure immediately, and the bowel emptied out at once. We were not able to demonstrate any other pathology either in or outside the bowel, and the patient made an uneventful recovery and is apparently well at this time. The band seemed to have no attachment other than surrounding the bowel like a purse-string."

I saw the patient four months after the operation and he appeared to be in perfect health. All gastro-intestinal symptoms had disappeared and he had gained 40 pounds since the operation.

Let us now consider briefly the etiological factors, the pathology, symptomatology and diagnosis of acute intestinal obstruction. Anything which suddenly occludes any part of the intestinal tract for more than a short time, will bring on symptoms and signs of obstruction. If this occlusion is permanent, the symptoms and findings change more or less rapidly from that of simple obstruction to the added signs of shock, collapse and finally, if the patient lives long enough, peritonitis.

It is this change in the picture that makes it most difficult perhaps for the average physician, who sees a case at rare intervals, and often at a more or less advanced stage, to recognize it as essentially obstruction, unless a definite and accurate history is obtainable. Nature is kind and undoubtedly there are numerous temporary obstructions that are treated as other things, until finally an attack of permanent occlusion of the gut occurs, which does not yield to nature's efforts of relief, and the advanced picture of obstruction presents itself.

Acute obstruction which can only be relieved by operation is nearly always the result of some anatomical anomaly or chronic pathology. This has progressed until finally, by some accident, complete occlusion occurs. Some of these conditions are illustrated by the cases cited.

The more common conditions of this kind are as follows: Adhesions, postoperative or the result of peritonitis, volvulus, intussusception, Meckel's diverticulum, anomalies of the caecum and appendix, foreign bodies, gall stones and enteroliths, internal hernia and external hernia, obstructions from bands and abnormal openings, cicatricial stricture, tumors of the bowels, pressure of tumors outside the bowels, fecal accumulations, postoperative obstruction and embolism or thrombosis of the mesenteric vessels.

In only part of the above can the cause in a given case be determined definitely from the history and examination alone, and it is only cleared up at operation,—or autopsy.

The symptoms of acute intestinal obstruction depend on the cause, the location, stage of the case, and previous condition of the patient. As in most other clinical entities, the first symptoms appearing are the most diagnostic and least complicated. The onset is marked by pain, shock and vomiting. The tighter the constriction the more sudden the attack, the more bowel involved the greater the shock. The pain is continuous but more violent at regular intervals of a few minutes when peristalsis occurs. No rigidity or tenderness is present at first, but comes on later when circulatory changes take place in the bowel involved. Vomiting comes on soon after the pain, and gives only temporary relief. Depending upon the location, a greater amount of material is vomited than has been taken recently. This depletes the blood and tissues, and suppression of urine is the result. After an initial bowel movement, gas and feces do not pass. As the case progresses distention takes place and becomes worse, and collapse finally occurs. The Hippocratic facies become characteristic of this stage.

Peritonitis begins and with it paralysis above and below the obstruction. The patient rapidly succumbs, dying from the toxemia and exhaustion.

The symptoms and their course are easily accounted for by the anatomy and fundamental physiology of the gastro-intestinal tract. An accurate knowledge of these is the best aid in diagnosis.

Intussusception occurs most often in children and following diarrhea. Usually in adhesions there is some history of antecedent peritonitis. Meckel's diverticulum is most apt to give trouble before middle age. Foreign bodies swallowed, fecal impactions and external hernia are self evident.

Differential diagnosis must be made from appendicitis, acute pancreatitis, perforation of an ulcer, renal and hepatic colic, rupture of ectopic pregnancy, and strangulation of the pedicle of an ovarian tumor.

The prognosis in cases that are not relieved in the earliest stages rapidly becomes very grave. Mechanical and medical aids to relief may be effective at times in hernia, intussusception, fecal impactions and foreign bodies in the lumen of the gut; and such means should be used early in these cases, first, and the resort to operation made as soon as it becomes evident they are not producing results. The uselessness of these attempts in the other types of obstruction is self evident, and the time should not be wasted in their attempted application. Da Costa in his teaching makes this statement: "Nine out of ten of these cases that I see in hospital work are gravely shocked and practically dying on admission."

The logical treatment then resolves itself into making an early, accurate diagnosis, and bringing operative relief to the patient early before complications render his recovery difficult or impossible.

CONCLUSIONS.

1.—Acute intestinal obstruction is essentially a condition requiring surgical interference for its relief.

2.—The high mortality rate in operative cases is due largely to patients coming to operation late in the attack.

3.—Conversely—Improvement in the management of acute intestinal obstruction depends largely on an early accurate diagnosis and bringing operative relief to all cases needing surgical interference, as early as possible.

A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Nebraska. Formerly Lt. Col., M. C., U. S. Army.

CHAPTER VII.

The subsequent experience of the Orthopedic service at Savenay was one which I shall always be very glad to remember. In the first place Colonel Goldthwait sent to Savenay a number of the very best medical officers available for this special work.

Captain LeRoy C. Abbott came a few days after my arrival. He developed into a fine surgeon and did most of the surgical work in the Orthopedic Department at Base Hospital No. 8. He became chief of the Orthopedic service in Base 8, and was promoted to the rank of Major.

With the transfer of the amputation service from Chateauroux, Captain Wilson (later Major) also came to Savenay. More than 3,000 amputation cases came through our department there and Captain Wilson developed a fine service. To these two officers and later to Major Murray S. Danforth, who came in December to Base Hospital No. 69, we were largely indebted for the really excellent work that was done in the Orthopedic Service at the Savenay Hospital Center.

In addition to the excellent personnel of the Orthopedic Staff, we developed many good friends in other departments who contributed in many ways to the care of our large service. Col. Webb E. Cooper, commanding officer of Base Hospital No. 8, and Lt. Col. R. J. Estill, who succeeded him were both in hearty sympathy with the surgical and splint methods worked out for the transport and treatment of these cases. Miss Amy F. Patmore, who was chief nurse of Base Hospital No. 8, and later chief nurse of the Savenay Hospital Center, was always sincerely devoted to the welfare of the soldier patients. The nurses on the operating room staff of Base Hospital No. 8 were always of the greatest help in carrying out our plans for the care of these patients.

Finally and of great importance were the Reconstruction Aides, who came to Savenay in September, 1918. They worked not only in the field for which they came, physiotherapy and occupational therapy, but assisted in many ways in the progress of our work. Miss Marguerite Sanderson, Chief Aide for the A. E. F., and Miss Leah Thomas, Chief Aide for Base Hospital No. 8, lent themselves and their helpers to the conduct of the Orthopedic headquarters, splint department, operating room and even to the making of plaster of Paris bandages, when the situation required the help and cooperation of everyone. All of these features contributed in no small manner to the tremendous amount of work that was accomplished during the fall of 1918, and during the rush at the Savenay Hospital Center following the Armistice.

One can sketch only very superficially what happened during these seven months at Savenay. From July 1918 to March 1919, more than sixty thousand patients passed through the Savenay Hospital Center. Of these about sixteen or eighteen thousand were classified by us as orthopedic. This included a large share of all the battle casualties. We had not only flat feet, sacro-iliac and back strains, and the various bone and joint disabilities of a minor sort; but also all of the fractures, all of the joint injuries, all amputations, practically all of the peripheral nerve injuries and soft part injuries in which, because of scar contraction or failure to splint, there were beginning or fully developed contracture deformities.

Savenay had been designated as the area to receive all sick and wounded from all the other base hospitals throughout France. At Savenay the patients were to be classified for return to duty, transfer to the United States, or to be held for treatment. It became my duty therefore, as Consultant in Orthopedic Surgery, to pass upon all of the kinds of patients referred to above, with reference to these points.

Patients were arriving during August at the rate of about five thousand per month. One of the first indications, therefore, was for a scheme by which patients belonging to the Orthopedic department could be located and dealt with immediately upon arriving at the Savenay hospital center. Two plans were adopted for this purpose. One was to locate the patients needing our attention as they came through the receiving room, and the other was to assign patients to certain wards according to diagnosis.

A little later we had in Base Hospital No. 8, separate wards for femur fractures (192 beds), arm fractures (256 beds), leg fractures (128 beds), knee joint injuries (34 beds), amputations (320 beds), etc. The other hospitals in the center followed this plan to some extent. This was true especially of Base Hospitals 69 and 88, where the work developed splendidly under Major Danforth and was continued later by Major Metcalf to whom I referred in Chapter I.

In order to assist us in this matter, we also adopted the plan of having a daily card index made in the registrar's office. These cards were prepared between midnight and morning by soldier clerks, who were assigned to this special duty. On my desk at eight o'clock in the morning, I found sometimes fifty and sometimes several hundred cards for patients admitted with orthopedic conditions during the preceding twenty-four hours. These cards were at once distributed to medical officers who went out to the wards and located the men wherever they were. The cards came back at noon marked, "return to duty", "transfer to the United States", "splint required", "operation required", or with such other information or recommendations as the medical officers thought proper. Recommendations regarding treatment were usually complied with the same day.

In a certain number of instances each day it was necessary for me to see these patients in consultation to decide upon the kind of operation, kind of splint, or for a decision as to other disposition of the case.

I have had several gratifying experiences since my return to civilian practice as the result of this kind of work. A young man came into my office not very long ago with three useful fingers attached to what was left of his right hand. He was using the hand and fingers very well and asked me what I thought of it. I told him I could see no indications for further treatment except for the removal of a small scar which was painful upon certain movements. He then reminded me that the question came up at Savenay as to whether or not his hand should be amputated because of a compound infected wound, I made the decision at that time against amputation, although it had been recommended. He was very grateful and appreciative on account of the hand having been saved.

Sometimes decisions in these cases were difficult to make. On one occasion we had two brothers brought to me for examination, one more seriously injured than the other. They were both anxious to return to the United States. It was far from easy, therefore, to mark one of these brothers for transfer home and the other for return to duty in France.

During September and October, we examined and passed upon more than five thousand patients in the Orthopedic service. Captain Abbott, who had become our chief reliance in the operating room and Captain Wilson, in charge of amputations, were operating almost every day. Some days Captain Abbott had as many as fifteen or twenty operations. Three principal splint shops had been developed in which a hundred to two hundred plaster casts and splints were being applied daily.

The question of the use of plaster of Paris was an interesting one. At first the use of plaster was forbidden. Within a few days after arriving at Savenay, however, our supply of splints gave out. After that we manufactured most of our own splints. We even developed a very creditable shoe shop which did a great deal of fine work. Crinoline and plaster of Paris, were avaiable and several of the officers assigned to this department by Colonel Goldthwait, were experts in the use of plaster. With my own fondness for plaster as a fixative dressing, it came therefore into extensive use. Even a great many of our spine and fracture cases were put into plaster of Paris for transfer to the United States. Plaster of Paris came to be the preferred dressing for both simple and compound fractures below the knee, and many hundreds of these casts were put on. We never heard of any very serious effects as result of this method. In fact the only complaint we had was that occasional cooties were found inside the casts.

With regard to the condition of patients upon arriving in the United States, the following letter received by us after the armistice, indicated that on the whole the patients arrived in a satisfactory condition.

The end of the war which came suddenly and dramatically on November 11, found us extremely busy. Before the Argonne offensive began, the forward hospitals had been cleaned out and we were crowded. Strenuous efforts were being made to clear beds for the victims of the severe fighting that was expected and that we had during September and October. Even so, "the worst was still to come". With the signing of the Armistice, there was almost a panic among the hospitals to get home. Train loads of patients came pouring into Savenay from hospitals all over France and our patient population grew from 8,000 to 11,000 in a few days in spite of the fact that some thousands were sent away.

In reply refer to S.G.O...RBO:HML

WAR DEPARTMENT
OFFICE OF THE SURGEON GENERAL
WASHINGTON

November 30, 1918.

From: The Surgeon General, U. S. Army.
To: Major H. Winnett Orr, Base Hospital No. 8
A.E.F., France. (Thru Chief Surgeon)
Subject: Returning wounded.

1. I have had the opportunity to visit nearly all the hospitals in this country to which the wounded are returning, and it is extremely gratifying to find that the care and overhauling which the cases received at Base Hospital No. 8 is resulting in their returning to this country in most excellent condition. There are very few preventable deformities and the splinting is well done.

2. They are bearing their transport excellently. This, we realize, is largely due to the remarkable supervision which you and Abbott and your staff are giving the cases. The few cases of preventable deformities which we have found have, as far as we have been able to ascertain, not come under your supervision.

By direction of the Surgeon General:
R. B. OSGOOD,
Lt. Colonel, Medical Corps, USA

In replying
please refer 24 Dec 1918
to file No.
C S 321623
———
2396

1st Ind.

O.C.S., Am.E.F., France, December 24, 1918.* To Major H. Winnett Orr, M.C. (Thru C.O., Hospital Center, Savenay, AEF).

1. Forwarded.

By Direction:
FWW-JES
F. W. WEED,
Lt. Col., Med. Corps.

Rec'd Hosp Center Dec 27, 1918.

All communications should be addressed to the Surgeon General
U. S. Army, Washington, D. C.

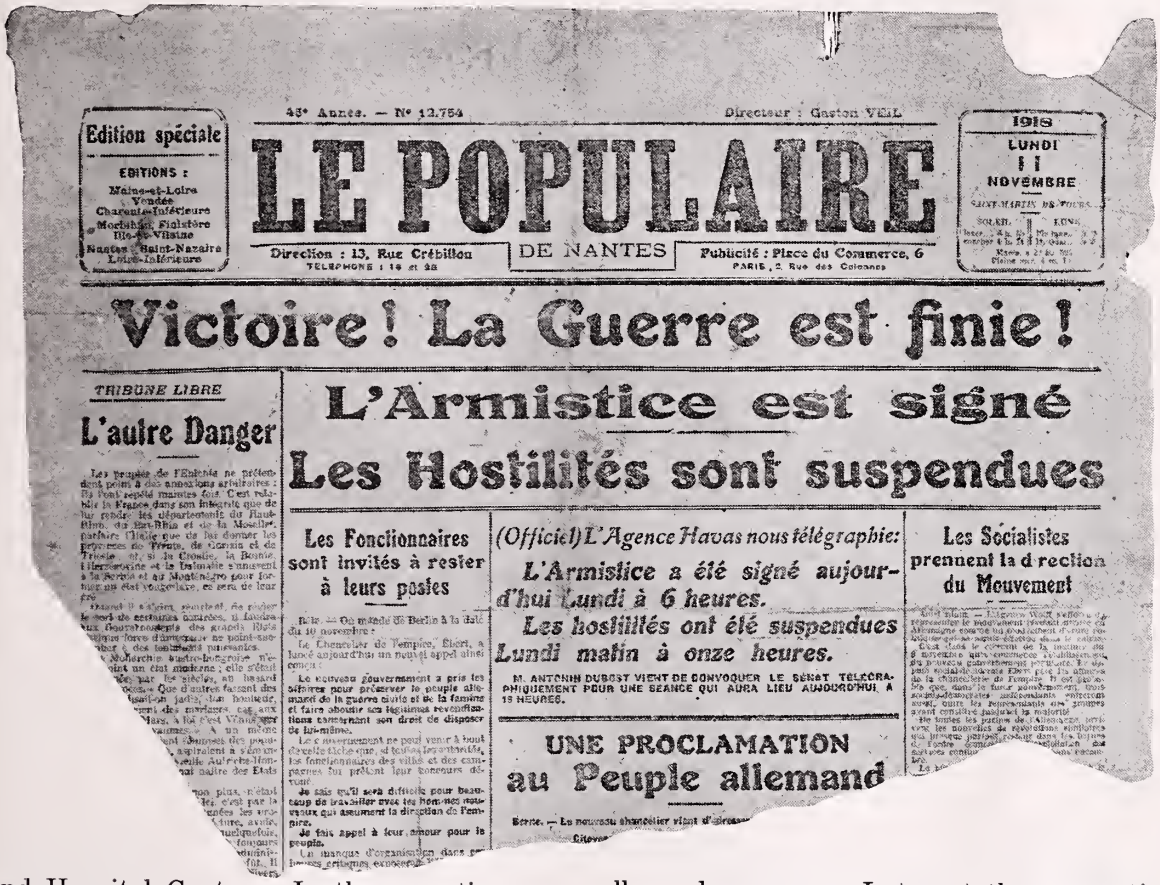
"TRUE COPY"
(copy)

Even so, the signing of the Armistice was an occasion of great rejoicing. No one who had seen the thousands of shattered and crippled men could fail to be glad that the firing at the front had stopped. At any rate, we felt that when we were repairing the damaged limbs we could make some progress with the job as a whole. There would not be more and more train loads of wounded to take the places of those who got well. One wondered how the British and the French could have carried on for over four years with thousands of wounded coming in every month and never an end of the war in sight.

After the first big rush matters began to ease up again. Evacuation of the wounded to the United States began to be easier and more regular. Medical officers were released from the front and began to help us in the rear. Some were pretty anxious to get home but we had the assistance of many.

It was soon apparent that the war was

far from over for us. During all of November and December our hospital was completely filled and it was not until January that we began to receive the last of the patients from some of the other Base Hospitals and Hospital Centers. In the meantime my own consultation territory had been widened so that not only Savenay, Nantes, and St. Nazaire had to be visited but Angers, Vannes and Camp Hospitals at Coetquidon, Montoir and La Baule (19 in all) were in our area.



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1918
LUNDI
11
NOVEMBRE
SAINT-MARTIN DE TOURS

Victoire ! La Guerre est finie !

TRIBUNE LIBRE

L'autre Danger

L'Armistice est signé

Les Hostilités sont suspendues

Les Fonctionnaires sont invités à rester à leurs postes

(Officiel) L'Agence Havas nous télégraphie:

L'Armistice a été signé aujourd'hui Lundi à 6 heures.

Les hostilités ont été suspendues Lundi matin à onze heures.

M. ANTONIN DUBOST VIENT DE CONVOQUER LE SÉNAT TÉLÉGRAPHIQUEMENT POUR UNE SÉANCE QUI AURA LIEU AUJOURD'HUI A 15 HEURES.

UNE PROCLAMATION au Peuple allemand

Les Socialistes prennent la direction du Mouvement

This gave us a real glimpse of lower Brittany and a wider scope for usefulness.

Several other things stand out in my memory of the service at Savenay. During October I spent a week in bed with bronchitis. We had just begun to arrive at definite conclusions regarding the scope of our work and the best methods to be employed. With the assistance of Miss Margaret Blake, who was a most helpful Reconstruction Aide, and with the collaboration of Captain Abbott and Captain Wilson, I wrote a fairly complete outline of the teachings of Sir Robert Jones and Colonel Goldthwait together with our own conclusions regarding the work. This was accepted at once by Colonel Cooper and sent out by him as Circular No. 138, Savenay Hospital Center*, to all chiefs of services and to all ward surgeons. Later at the suggestion of Col. Goldthwait this was sent to other Base Hospitals also.

The following letter sent out in November is along similar lines and suggests both methods and results of our work.

Nov. 20, 1918.

From: Consultant in Orthopaedic Surgery, Savenay.
To: Chief of the Surgical Service Base Hosp.
Subject: Orthopaedic Patients.

Sir:

Since Sept. first a statistical study has been made of patients arriving in Savenay for evacuation to the United States. The conclusions reached and to which it is desired to call your attention in this communication are based upon the observation of somewhat more than 4,000 cases.

It has been found that about 350 patients of each 1,000 arrive in condition for immediate transfer to the United States, requiring no treatment or splinting of any kind. About 200 of each 1,000 arrive wearing proper splints. Some may require simple surgical dressings. A few patients of this class require drainage operations but most are ready for transfer to the United States within a few days.

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*This circular of 36 pages will be printed in full when this story is published in book form.

300 patients of each 1,000 require extensive modification or complete change of splints with or without other treatment. The majority belong to two classes: (a) Gun shot wounds of the upper arm or elbow (75 to 100 per 1,000 of all cases), (b) Gun shot wounds of the hip, femur shaft or knee (also about 75 per 1,000 of all cases). A large percentage of all these cases require readjustment of position under anesthetic, additional drainage, change from straight Thomas arm splint to some device with the elbow in flexion and the hand in supination, applications of new Thomas traction splint for femurs, etc. Also a considerable factor under this same heading is that of GSW. of wrist and hand with palmar flexion and GSW. of the ankle and foot with drop foot. These two classes of injury contribute approximately 35 to 50 cases respectively per 1,000.

Finally 250 cases per 1,000 arrive at Savenay without splints, for whom either with or without preliminary operation or readjustment of position, the application of splints is necessary. This class includes practically every kind of war injury, although naturally most of the severe conditions have been dealt with in preceding hospitals. Some of the more important items may be briefly mentioned.

First: GSW. of the shoulder with fracture (about 20 per 1,000 cases). For this condition it is frequently advisable to apply an abduction splint (Aeroplane splint).

Second: GSW. injuries of the median, musculo spiral or ulnar nerves (20 per 1,000 cases).

Third: GSW. of the hip, and shaft of the femur (50 to 75 per 1,000 cases).

Fourth: GSW. of the knee (25 per 1,000 cases). It has been observed that knee joint injuries are apt to come without splints, especially those who are convalescent. For bed patients, plaster of Paris or the Thomas splint and for walking patients the walking caliper splint should practically always be put on to be worn during the trip to the United States.

Fifth: In compound leg fractures (75 cases per 1,000) readjustments of position have been more frequently necessary than in any other injury. Neither the Thomas traction splint nor the usual leg splints have proven adequate to maintain, while traveling, length and position in these difficult fractures. Having due regard for wounds, plaster of Paris is especially to be considered in this class of cases. Skillfully applied it has been found to serve the purpose much better than anything else.

Sixth: Soft part wounds of the upper and lower extremities (respectively 40 and 50 per 1,000 cases) also very commonly arrive at Savenay requiring change of splints either with or without preliminary stretching and with or without anesthetic. Contracture deformities of the knee are much more common than any other deformity of this class. In general then, it may be observed that our experience justifies the conclusion that of each 1,000 Orthopaedic patients arriving at Savenay, approximately 500 require changes of splint or the application of the new splints and that of these ¼—⅓ require preliminary operation consisting of readjustment of positions or drainage.

It must be assumed that any unit now working in Savenay doing less work along these lines than is indicated above, is falling short of the requirements of its patients. One of the first things necessary is to locate patients requiring such attention as they come into the hospital. Only in this way can they be promptly and effectually dealt with.

A report along similar lines is being prepared for the amputation service and will be sent you in due course.

H. W. ORR, Major M. C.

In January I was told that I might remain indefinitely on duty in France. There were said to be 8,000 to 10,000 orthopedic cases still in France. Toward the end of February, however, I learned that there were only about 2,000 to 3,000 outside of Savenay and Major C. B. Francisco arrived about February 20th to take my place.

(To be Concluded).

A CASE OF ENLARGED THYMUS WITH AUTOPSY REPORT.

Floyd Clarke, M. D., J. Harry Murphy, M. D.,
Omaha, Nebraska.

L. W., aged one year, an institution baby, was born the eighth month of pregnancy, weighed six pounds at birth, was fed on modified milk till seven months of age, then on a more or less general diet with milk.

The mother had treatment for gonnorrhea before the baby was born. The baby had smallpox at four months of age, scarlet fever at about seven months of age. Recovery was uneventful and without complications from both of these illnesses.

The weight was twenty pounds at time of beginning of this illness. The baby was rachitic. She became suddenly ill with a cough. Temperature was one hundred and four. About the third day of illness began having some difficulty in breathing with abdominal type of respiration. She vomited frequently during the first one or two days of illness. Vomiting occurred especially after each coughing paroxysm. At this time there were numerous rales over both lungs but no apparent areas of consolidation.

Two days before her death she began having attacks of cyanosis lasting for four or five minutes. Respiration became more and more labored with a croupy inspiratory and expiratory effort. On the second day of her illness she was given ten thousand units of diphtheria antitoxin suspecting a possible laryngeal diphtheria. The temperature for twenty four hours before death did not rise above 100.8. She died on the fifth day of her illness.

We are unable to account for the high temperature at the beginning of the illness.

AUTOPSY REPORT.

The body is that of a child apparently one year of age, of distinctly rachitic development, quite well nourished, anterior fontanelle open. The skin is clear, free from eruptions, and showing post mortem discoloration of the dependent portions. Rigor mortis not present.

Pupils in mid dilation, regular, no inflammatory exudate. Nose negative. Mouth negative.

On opening the abdomen, the muscles were red and thin. The abdominal wall was thin and there was a very slight amount of subcutaneous fat. The peritoneum was smooth and glistening. The contained viscera appeared to be in normal relation.

On opening the thorax the contained viscera filled the cavity and the pleurae were clear and smooth. There was no excess of fluid in the pleural or pericardial cavities. The thymus presented the largest area of exposed organs, extending from the clavicles to the lower border of the fourth cartilage, and laterally to the costochondral junction on the right and approximately to a line midway between the midline and the costochondral junction on the left.

The thymus infolded posteriorly on the right, extending to the vertebral column, measuring 12.5 cm. x 10.5 cm. x 3.5 cm., and weighed seventeen grams.

The lungs hung free in the pleural cavities, presented no areas of consolidation, and on cut surface were brownish and pink, with no excess of fluid and no exudate expressible from the bronchioles.

The heart and great vessels were normal in size and appearance. On section, the valves were competent and the muscle apparently normal. The foramen ovale was patent, allowing the passage of a small probe.

The trachea and larynx on removal were normal in size and configuration. The mucous membrane was intact and free from any exudate.

The liver was somewhat larger than normal, smooth, and on section, cut surface was slightly pale chocolate color, moist. Gallbladder and ducts normal.

The spleen was slightly enlarged, smooth, and quite firm.

Stomach and intestines negative.

Pancreas negative.

Kidneys negative. Ureters and bladder negative.

Uterus and adnexae negative.

Lymph glands in mediastinum enlarged to size of small almond.

Retroperitoneal lymph glands slightly enlarged.

Anatomic diagnosis:

Lymphatism: Enlarged thymus.
Patent foramen ovale.

A CASE OF HYPERNEPHROMA WITH AUTOPSY FINDINGS.

Warren Thompson, M. D., Omaha, Neb.

T. G.—47 years old—married, but without children—was admitted to St. Joseph's Hospital, July 11th, 1919. His chief complaints were shortness of breath, weakness, pain in the joints and abdomen, and a dry cough, occasionally with bloody sputum, which had grown worse the last two weeks. He stated that he had felt well until four weeks previous to his admission when he began to have attacks of rheumatism with shooting pains in the hips, shoulders and legs. He also had pain in the abdomen and chest. These pains were worse during damp weather. Since the onset of the present trouble he had been getting weaker and had lost twenty five pounds in weight. On taking a deep breath he said that his breath was interrupted by "something that seemed to cut if off in his throat." Seven months ago a growth, said to have been cancerous, without histological examination, had been removed from the tongue by cautery.

The family history was negative. There were no past illnesses except typhoid fever.

Physical examination revealed an emaciated pale individual with a lump on the left side of the head which fluctuated and was not tender. The whole muscular system was atrophied and there was a general weakness that scarcely enabled the patient to walk about.

The pupils were equal but did not react to light. The cranial nerves were normal. There was no disturbance of sensation throughout the entire body. The knee jerks were almost absent. There was no ataxia or Rhombergism.

The tongue was coated and there was a scar on the right side of the tongue. The teeth were in poor condition. The tonsils were small and infected. The cervical glands were palpable.

The chest on the right side was dull practically over the entire area and dullness became flatness just below the angle of the scapula. There was a layer of air containing lung between the flatness and the diaphragm. Rales were heard over the entire chest on the right side. The heart action was rapid and a diastolic murmur was audible over the entire precordium.

Rectal examination revealed a normal prostate and normal mucous membranes.

The right chest was aspirated several times and each time about ten cubic centimeters of bloody fluid was obtained which was sterile and showed only cell debris. A systolic murmur gradually developed over the precordium and with it a dull to and fro murmur, pericardial in character, was audible during the last week of life. The X-ray report of the chest on the fifteenth of July showed a "radio opaque area in the lower quadrant of the right chest with the diaphragm fixed and a thickened pleura with an encysted fluid area or consolidation in the right lung".

The patient developed a retention of urine at one time and had to be catheterized for several days but gradually regained the normal use of the bladder.

Ten days before death a small lump appeared above the right ear; it soon broke down and discharged until the time of death.

The abdominal pain persisted and the patient gradually became more and more comatose. He died August 17th, thirty seven days after his admission to the hospital.

Laboratory Findings: The sputum examination was repeatedly negative except for blood and gram positive cocci. The stool was positive for blood. The blood Wassermann and Von Pirquet tests were negative. The spinal fluid showed 20 cells per cubic centimeter, increased globulin and a plus one Wassermann reaction. The leukocyte count varied from 21,000 on admission to 38,000 a week later and 48,000 a week before death. The differential count showed 79% polynuclears, 11% small lymphocytes, 10% large lymphocytes, 70% hemoglobin, and red cells were 4,800,000.

A test meal showed free hydrochloric acid absent with a total acidity of 10, and much blood, both microscopically and chemically.

A blood culture on the sixth of August and another on the fifteenth showed no growth.

The urine was repeatedly negative except for a few pus cells.

The temperature varied between 99° and 101° for the first two weeks and then never went above normal.

The pulse gradually climbed from 100 to 140 and then fell back to about 110 during the last week.

The respiration varied between thirty and forty during the last week.

The patient gradually grew weaker and died August 17th, 1919.

Discussion: The case presented certain diagnostic difficulties. The fever (afternoon rise up to 101°), loss of appetite, loss of weight, cough with bloody expectoration, the physical findings, and the fluid aspirated from the chest were strongly suggestive of a possible tuberculous infection. However, the failure to find tubercle bacilli on repeated examination of the sputum, the X-ray findings, the negative tuberculin test and the persistent leukocytosis of 21,000 to 48,000, spoke against this diagnosis.

The involvement of the nervous system with stiff pupils, diminished and at times absent knee jerks, the absence of tendo Achilles tenderness, the increased cell count and positive globulin tests in the spinal fluid were suggestive of a possible lues. The pulmonary and gastrointestinal findings would likewise be in keeping with this diagnosis. However, the negative history, the negative Wassermann and gold chloride tests, combined with failure of response to antiluetic treatment, made this diagnosis unlikely.

The development of a systolic murmur at the apex and a diastolic murmur at the base with the later development of a typical to and fro pericardial murmur one week preceding death, combined with febrile manifestations and the persistent leukocytosis made the possibility of malignant endocarditis likely. However, it was difficult to reconcile this diagnosis as the chief cause for all the symptoms and physical finding particularly those referable to the respiratory, gastrointestinal and central nervous systems.

The history of loss of appetite, loss of weight, gastric distress with occasional vomiting, combined with the laboratory reports of absence of free hydrochloric acid, the presence of blood in the stomach contents and stool, were suggestive of the possibility of cancer of the stomach. Unfortunately, the gastrointestinal symptoms were not an early complaint so that an X-ray examination of the gastrointestinal tract was not made at the time the chest was rayed and the patient later became so weak as to make this impossible. The history of a tumor of the tongue having been removed but a few months previous to the onset of symptoms suggested the possibility of the tumor having been malignant and that the resulting symptoms and physical findings might be due to widely disseminated metastases. This was the most acceptable diagnosis at the time of the patient's death, the gastrointestinal symptoms, the pulmonary findings, the central nervous system manifestations all fitting in with this hypothesis. The cardiac findings which developed while the patient was under observation did not fit in well with the diagnosis of carcinoma with metastasis so that the final clinical diagnosis was malignant endocarditis, and pericarditis; a malignant growth, probably carcinoma with metastasis, was considered probable.

Report of the autopsy, made August 18th, 1919, by Dr. E. G. Carey. The body is that of an emaciated white male, slender, slightly built. The pupils are in mid dilatation and are equal. There is a soft cystic mass in the scalp of the left parietal region near the mid line which measures 3 x 4 cm., and a smaller one in the hair margin in the right temporal region.

The subcutaneous fat layer is represented by very thin layer, loose areolar tissue. Muscles are pale, and atrophic. The peritoneum is smooth and glistening. The liver extends one finger below the costal margin, in the right mammary line. Diaphragm fifth intercostal space right, sixth on left.

Heart—The pericardium contains about 75 cubic centimeters of a reddish brown fluid. Over the upper portion of both ventricles and on the auricles, there are adhesions which break readily, leaving a rough villous surface. In the walls of the ventricles, there are pale, projecting nodules of soft tumor. One of these extends entirely through the left ventricular wall and runs upward inside the ventricle as a soft, light yellowish, cylindrical mass about 1½ centimeters in diameter and ending just short of the aortic valves. This growth arises near the septum and near it over the base of papillary muscle is another mass, sessile and also projecting into the cavity. Small growths show in the endocardium. The valves show only slight marginal thickening, the position of the tumor masses being such as to interfere with papillary muscle action. The right ventricular wall is also involved by growths, the nodules varying in size from a pea to eight centimeters in diameter.

Chest—The right pleural cavity is obliterated by firm fibrous adhesions. Posteriorly at the base of the lower lobe is a pocket containing about 30 cc. of reddish fluid in which float flakes and clots of fibrin. The pleura shows several pea-sized, greyish nodules. Section of the lung shows it to be studded with small millet to pea sized nodules that are hollow in the center and stand open like a cross section of bronchus. The contents of these nodular cysts are sometimes blood stained, sometimes pale, soft and grumous. The left pleura is not adherent, but shows few scattered nodules, while the lung is studded with growths in the same way as the right. The nodules feel shotty. In the lower lobe of the left lung is a cavity about 5 centimeters in diameter across which runs a white thrombosed vessel. The wall of the cyst about 1 millimeter in thickness is well defined, pale and contains air and a small amount of thick blood stained mucoid material.

The liver—shows several cystic nodules in the substance, the largest beneath the capsule on the upper surface of the right lobe, and measuring 2½ centimeters in diameter. With the exception of the few scattered nodules the organ is well preserved. The gallbladder contains about 20 cubic centimeters of golden yellow bile without stones. The cystic duct is patent.

The spleen is slightly enlarged, its capsule is wrinkled. The organ is fairly soft, the pulp scrapes slightly and is light reddish brown in color with prominent fibrous markings.

The stomach is small and tubular. Two small nodules show in the mucosa of the fundus, one a discreet crater without surrounding congestion.

The intestines show in the serosal coveing and in the walls frequent small pale nodules, some of which have cystic centers. In one place in the jejunum there is an adherent loop in the wall of which is an infiltrating mass and on the mucosal surface a crater like ulceration about 4 x 5 centimeters. The nodules are limited to the small intestine.

The pancreas is about twice normal size, is firm, and at both head and tail there are cystic areas which are lined with soft, light yellowish tissue showing cords free in the cavity. The organ is adherent to the surrounding tissues and the tail is bound to the capsule of the kidney.

Kidneys—The left is about twice the normal size. It is adherent at the hilus to the tail of the pancreas. The surface is nodular and the capsule is closely adherent over the nodular areas. The cut surface is found to be planted with light yellowish nodules that in outline resemble corpus luteum. These nodules are variable in size from 1 to 3 cm. in diameter. Most of them are cystic. The right kidney is similar to the left. The growths have replaced a good part of the parenchyma. No extension into vessels of the hilus can be made out. The upper pole of the right kidney shows extension to the adrenal.

The adrenals are both much enlarged, measuring about 6 x 4 x 3 centimeters. They are soft with broken down cystic centers into which extend loose cords of tissue. The right is closely adherent to the upper pole of the kidney and the growth extends from the adrenal into the kidney.

The bladder shows nothing noteworthy.

The prostate shows nothing noteworthy.

Anatomical Diagnosis:—Hypernephroma involving both adrenals and kidneys with metastases to the pancreas, intestines, liver, lungs and heart. Cord-like growth of metastasis into lumen of left ventricle. Pericarditis, villous. Pleurisy, chronic fibrous, right.

NEW AND NON-OFFICIAL REMEDIES.

Beebe Protein Milk.—Edweiss Milch of Finkelstein.—A modified milk preparation having a relatively low content of carbohydrate and fat and a relatively high protein content. Each 100 Gm. contains approximately solids 10.2 Gm., carbohydrate 2.5 Gm., protein (casein) 5.3 Gm., fat 1.6 Gm., and ash 0.8 Gm. The acidity is stated on each package. The high protein content of protein milk is claimed to act as a preventive of fermentation and to serve as a medium in which a change in the intestinal flora takes place. Protein milk is said to be especially indicated in gastro-intestinal disorders of infants, accompanied by fermentation and diarrhea. Beebe Laboratories, Inc., St. Paul, Minn.

A PHYSIOLOGICAL EMPYEMA TUBE.

Czar C. Johnson, M. D., Lincoln.

Herewith is a physiological empyema tube with directions for making the same. It is easily made with four one inch by four inch strips of dental rubber or an old glove, (I should advise no heavier material), a drainage tube and a little rubber cement.

DIRECTIONS FOR MAKING EMPYEMA TUBE.

Fig I. Dental rubber strips. I"X4" provide 4 strips.

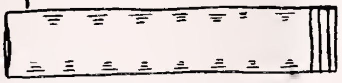


Fig II. Dental strips-edges cemented making flat tube

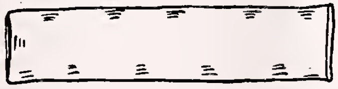
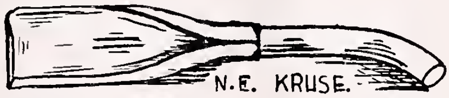


Fig III Round rubber tube-cemented in flat tube I in.



Note edges rolled over tube

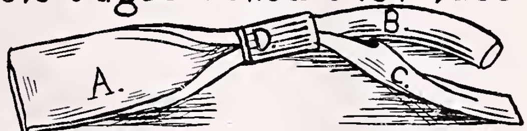


Fig IIII. Tube completed.
A. Collapsible rubber Tube.
B. Round rubber Tube cemented into place.
C I"X4" Dental rubber- to hold tube to skin with adhesive plaster. D. I"X4" Dental rubber binder and shoulder for tube.
Cut ends to desired length.

You will note by trying it that air and fluids may be forced from above downward but not in the reverse direction. I believe it meets all the requirements, for it allows pus to flow outward, does not admit air into the cavity, the shoulder and rubber attachment prevents the tube from slipping into the cavity without safety pins, etc., and at the same time the elastic rubber allows for expansion of the lung without change in the position of the tube. Solutions may be instilled through the outer opening, and dressings placed under the outer end keep the skin dry. I have used this successfully and am confident that others will find it worth while.

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THE JOHNS HOPKINS DICTUM.

Much discussion has resulted from the dictum of the Board of Trustees of Johns Hopkins Hospital, that "The maximum fee that any surgeon ought to charge for an operation, no matter how wealthy the patient, is $1000. The maximum fee that any physician ought to make for attending patients in a hospital, is $35.00 a week."

Most of us will agree that the trustees started a profitable discussion on an important topic, however much we may differ from the conclusions. Most persons will agree with the writer (Pa. Med. Journal), who says, "An operation which saves his life is worth proportionately more to the very rich than to one not so rich," and with the surgeon who gives service equally to millionaire and mendicant, and who says the rich should pay for those who cannot. Most persons will also agree that a limit of a thousand dollars for an operation and a limit of thirty-five dollars for a week's medical attendance on a patient, critically ill at a hospital, is not by comparison, equitable. We cannot well escape the implied criticism that surgery is tending toward commercialism. The American College of Surgeons which fostered the propaganda against fee splitting may be able to deal with the problem of extortion in the surgical world.

A noted clinic is said to charge according to a person's commercial rating and that basis seems to be a fair one.

THE GREAT MIDDLE CLASS AND HOSPITAL FEES.

A writer in a New York daily makes the assertion that the great middle class is almost barred from the benefits accruing from the rapid development of medical science, for the simple reason that they are not poor enough to accept charity and yet are not wealthy enough to meet the rising costs of proper hospital treatment.

Concrete examples are cited, one of a man of small means whose 18 days stay in the hospital for an hernia operation cost $353.00 and another in which the hospital fees for tonsillectomy and adenectomy amounted to $51.00, both exclusive of the surgeons' fees. The room, the nurse, the anaesthetist, and operating room account for the total hospital charge.

A leading specialist of Nebraska commenting on the above suggests that the doctors are largely to blame for a good deal of the unnecessary expense that patients are put to in that they do not use enough care in trying to save the pocket book of the patient in regard to hospital work.

Your editor agrees with the statement and suggests that this is a matter for serious consideration.

NURSING ASSISTANTS NEEDED

The writer has for some time been of the opinion that there is something radically wrong in the nursing world for which there should be a remedy. He is also aware that there are others in the rank and file of the medical profession of the same opinion. It is therefore encouraging to note on the authority of Dr. Charles H. Mayo (Pictorial Review, Oct.), that:

"The educational standards for registration of nurses as set down by the nursing boards of the various States have gone beyond all reason. Any intelligent girl can acquire in two years all the knowledge necessary for the thoroughly competent nurse. I know that in my work I never have to ask any nurse to do anything which she could not have learned how to do in two years' training. But as the laws of most States demand high-school pre-education and three years' training for the registered nurse, the only way to circumvent them is by training sub-nurses or nursing aids who will accept smaller pay, whose demands are not so exacting, and who will be proficient enough to take hold of almost any case presented to them.

"The third year in the training course is little more or less than exploitation of the student nurses for the benefit of the hospitals. And it is closing the field to hundreds of thousands of country girls with a fine desire for service, and who can not, for economic reasons, finish high school nor spend three years in training. These girls are contented with a fair wage and fair living conditions. They do not demand luxuries. They have been used to working and they are not possessed with the unrest which besets more complicated centers of population."

We may freely admit that the present nursing autocracy is the outgrowth of a system of oppression in the past by hospital authorities who demanded menial labor and other unreasonable service. The fact remains that the world is suffering from a shortage of nurses of any kind and that the great middle class of people cannot pay the price at present demanded by graduate nurses.

The medical profession as a whole must take a hand in the settlement of this problem in the immediate future.

TUBERCULOSIS AMONG THE NEBRASKA WINNEBAGO.

A social study of surpassing interest on the incidence of tuberculosis among the Winnebago Indians in Thurston county, Nebraska, by Margaret W. Koenig, M. D., of Lincoln, (published by the Nebraska Historical Society), deserves passing comment.

This study was made in 1919 when according to Agency records there were 1078 Indians enrolled. Over 80% are fullbloods. "As a whole they understand the English language; 850 can speak and 700 can read and write English."

In this study the physical examinations included heart, lungs, lymphatics, skin, skeleton, and also laboratory tests and X-ray examinations where indicated. Information was secured concerning 237 cases of tuberculosis within a decade, of which number 127 were deceased at the time the study was made, giving a mortality rate of 11.7 per 1000. For the seven years for which statistics are available 18.8 percent of the deaths were due to tuberculosis. In the study 110 cases were found among 581 persons. Making allowance for reasons given in detail the writer thinks at least one in every eight is afflicted with some form of tuberculosis.

The resistance of the Indian to tuberculosis is less than the white man and the inroads progress more rapidly. "The theory advanced by the English observers that lymphatic tuberculosis is due to bovine infection is not borne out among the Winnebago, as practically no milk is used by them," there being not over half a dozen cows on the reservation.

Although supposedly civilized and educated as noted above, home sanitation among the majority of the Winnebago is extremely bad, and is largely the cause of their pitiable condition. Dissipation, close intermarriage, etc., are also important factors.

THE INFANT WELFARE MOVEMENT.

Within only the past few years has the civilized world begun to recognize the importance of the baby. Previously the great questions which needed to be solved were entirely related to the physical, moral and economic welfare of the adult. Medical science dealt almost exclusively with the pathology, symptoms and treatment of disease. Children were only of medical interest if diseased. As preventive medicine came to the foreground, intelligent workers realized that good results in the prevention of disease, especially such conditions as chronic nephritis, various chronic digestive disorders, arterial degenerations, etc., could only be accomplished by beginning the preventive measures as early in life as possible.

This realization, combined with the effect produced by the high infant mortality, gave to the study of infant welfare an impetus which has resulted today in the great movement throughout United States, England, France and Germany for "Better Babies." In the various countries this movement has taken different aspects, different stages of the child's life have been emphasized.

In this country all phases are being intensively studied. We have our prenatal clinics, newborn clinics, nutritional clinics, school inspection and the establishment of general health centers.

These activities are not confined to the medical profession. In fact it is too often the case that, the medical men who should be in the forefront of such movements only become identified with it after it has been firmly established in the community and they are forced into it by public opinion. Even today when the vast benefits are plainly apparent to all, there are some physicians who fail to support and even sneer at the various agencies.

There is, however, a greatly increasing number of physicians who are gladly giving their time to these movements and are encouraging in every way possible the work in their communities. The infant welfare work seems of special importance. The highest mortality is seen in the first few months of life. The vast majority of these deaths are due to ignorance on the part of mothers.

The great purpose of the infant welfare movement is the education of the mother. In the larger cities stations are established to which the mother brings the baby once a week. The baby is carefully examined, its feeding history gone into carefully, the various defects pointed out and the mother is given careful instructions as to the care and feeding of the baby. The visiting nurse or Red Cross nurse who is present at the conference follows the case to the home and the instructions are reviewed and practical demonstrations given in the preparation of feedings and in the institution of a proper hygienic regime for the baby. It is surprising how the interest in this work increases among the mothers of a district after a station has been established. At first they come rather reluctantly, but after a few trips they are enthusiastic over it and help to spread among others the knowledge which they have obtained.

This is demonstrated beautifully in the report of the Baby Hygiene Association of Boston. In January 1909, 218 babies were supervised, while in January 1921, 13,769 babies were supervised. Last year out of 7,272 babies and children coming to them for the first time, 3,751 came because their mothers were referred by mothers of babies already in their care. What is true in Boston is true on a different scale in almost every district in which a baby health center is established. One of the great benefits of these stations is the increase in the number of breast fed babies resulting.

Joseph Baker of New York says that 5 or 6 years ago in the health centers of New York City there was only 1% of breast fed babies, while today with 60,000 babies being cared for, 90% are breast fed in whole or part.

In the newborn clinic connected with the University of Nebraska, 106 out of the 113 babies observed during the past year have been kept on the breast, or breast and bottle, during the period of observation varying from 4 to 8 months.

While much of the welfare station work has been confined to the charity and semi-charity cases, the interest has been spreading to all classes. Mothers are realizing more and more that the time for medical advice is while the baby is well. It is quite common now for mothers to bring the baby in during the first weeks of life and ask for continuous supervision during its first year. In order to respond to this demand which is increasing, it is strictly up to the physician to give the most careful study to the subject and the most conscientious care to the baby. There is little doubt but the first step in the socialization of medicine will be in this field unless the private physicians meet the demand.

—C. M.

NOTABLE ABILITY SHOULD BE REWARDED.

Education is far too cheap, its energy too often misdirected, resulting in many individuals with "half baked" education and training, who expect rewards far and above, what their ability warrants. A student presenting before a society the fruits of sincere and laborious effort deserves fully as much reward as those who carry away this knowledge to be applied at a remunerative rate far and above their just deserts.

The writer of this editorial in his discussion of Doctor Kretchsmer's paper read before the Elkhorn Valley Medical Society at Norfolk, July 1921, was again impressed, as many times previously that the average attendant at these meetings rarely recognized or appreciated the fact that medical information, both good and bad, is too easily obtained. There came this man many hundreds of miles, in hot weather, to deliver, gratis, information of the utmost value to all those attending, with no thought of compensation. There was a time when an author was well repaid for delivering a good paper before a medical society but that time has passed owing to better and more trained men practicing in smaller towns, enhanced by modern means of communication which delivers an up-to-date medical literature.

However, an essayist who presents a paper of value deserves an ample reward and we should take some means of obtaining it from the audience in order to more than pay the railroad fare. If this plan is not adopted we will retain that pest, in goodly numbers, who constantly seeks to present fabricated stories about his ability, in the form of "a paper," solely for the object of obtaining business from that locality. Let us reward the student who deserves it and relegate the " four flusher" to the junk heap.

—C. A. R.

EDITORIAL PARAGRAPHS.

The regular medical profession has no cause for worry over the fact that Prohibition Commissioner Haynes has refused permits to the osteopaths and chiropractors to prescribe liquors; but that does not prevent us from seeing that the decision lacks the essence of something.

The student enrollment for the current school year at the Creighton University College of Medicine is 140, and at the Nebraska University College of Medicine, 257. It is understood that both colleges could have enrolled more had there been room to accommodate them.

That Mexico is awakening medically, after ten years of revolution is evident from the news from that country that a free venereal dispensary (the first of eight projected) has been opened in Mexico City, and the establishment of a new medical journal, the Revista Medica, at Morelia, state of Michoacan.

With an initial gift of $1,785,000 from the Rockefeller Foundation a new School of Public Health in Harvard University is being developed.

Any member of the medical profession needing an inspiration to look to the future and to dare and do, after mature deliberation, should read "The Americanization of Edward Bok."

One hundred thousand dollars has been offered through the Cosmopolitan Cancer Research Society to the discoverer of a medicinal remedy for cancer. It seems unlikely that scientific research will be much stimulated by this kind of an offer, whereas a foundation for research might materially aid in the work of discovery.

TAFFY

(From the Journal of The Iowa State Medical Society for Sept.)

"Dr. F. A. Long of Madison, Neb., has been elected editor of that excellent state journal. Dr. Long has been chairman of the committee on publication since the establishment of the state journal in 1916, and also chairman of the committee appointed to consider the plan of a state-owned journal. This experience has prepared Dr. Long to take up the work left by the lamented Dr. Aikin, the former editor."

THE NATIONAL BOARD OF MEDICAL EXAMINERS.

The National Board of Medical Examiners has just completed the first five years work and with it the trial period of its usefulness. The principle which this Board has stood for, namely, the establishment of a thorough test of fitness to practice medicine which might safely be accepted throughout this country and abroad, has been widely accepted. Since this Board was organized by Dr. W. L. Rodman, in 1915, eleven examinations have been held. These examinations have been conducted on the plan of holding at one sitting, a written, practical and clinical test for candidates with certain qualifications, namely a four-year high school course, two years of college work, including one year of Physics, Chemistry, and Biology, graduation from a Class A Medical School and one year's internship in an acceptable hospital. These examinations have covered all the subjects of the medical school curriculum and have been conducted by members of the Board with members of the profession resident in the place of examination appointed to help them. Such examinations have been held in Washington, Philadelphia, New York City, Boston, Chicago, St. Louis, Rochester (Minnesota) and Minneapolis. During the war a combined examination was held at Fort Oglethorpe and Fort Riley. There have been 325 candidates examined, of whom 269 have passed and been granted certificates.

Starting with the endorsement of the Council on Medical Education of the American Medical Association, American Medical College Association and various sectional Medical Societies, the recognition of the Army, Navy and Public Health Service Medical Corps of the United States and certain State Boards of Medical Examiners, the certificate is now recognized. Also by twenty states as follows: Alabama, Arizona, Colorado, Delaware, Florida, Georgia, Idaho, Iowa, Kentucky, Maryland, Minnesota, Nebraska, New Hampshire, New Jersey, North Carolina, North Dakota, Pennsylvania, Rhode Island, Vermont and Virginia, the Conjoint Board of England, the Triple Qualification Board of Scotland, the American College of Surgeons and the Mayo Foundation of the University of Minnesota.

There has been such a wide-spread demand for an opportunity to secure this Certificate by examination, that the Board has now adopted and will put into effect at once, the following plan: Part I, to consist of a written examination in the six fundamental medical sciences: Anatomy, including histology and embryology; Physiology; Physiological

Chemistry; General Pathology; Bacteriology; Materia Medica and Pharmacology. Part II, to consist of a written examination in the four following subjects: Medicine, including pediatrics, neuropsychiatry, and therapeutics; Surgery, including applied anatomy, surgical pathology and surgical specialties; Obstetrics and Gynecology; Public Health, including hygiene and medical jurisprudence. Part III, to consist of a practical examination in each of the following four subjects: Clinical Medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; Clinical Surgery, including applied anatomy, surgical pathology, operative surgery, and the surgical specialties of the diseases of the eye, ear, nose and throat; Obstetrics and Gynecology; Public Health, including sanitary bacteriology and the communicable diseases.

Parts I and II will be conducted as written examinations in Class A Medical Schools and Part III will be entirely practical and clinical. In order to facilitate the carrying out of Part III, subsidiary boards will be appointed in the following cities, Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, D. C., and Nashville, and these boards will function under the direction of the National Board. The fee of $25.00 for the first part, $25.00 for the second part and $50.00 for the third part will be charged. In order to help the Board the Carnegie Foundation has appropriated $100,000.00 over a period of five years.

At the Annual Meeting held June 13th, of this year in Boston, the following officers were elected: M. W. Ireland, Surgeon General, President; J. S. Rodman, M. D., Secretary-Treasurer; E. S. Elwood, Managing Director.

Mr. Elwood will personally visit all Class A Schools during the college year to further explain the examination, etc., to those interested. Further information may be had from the Secretary-Treasurer, Medical Arts Building, Philadelphia.

HOSPITAL NOTES.

Stuart is to have the first hospital to be opened in Holt county, under the supervision of Dr. F. L. Wilson.

The Fremont hospital cared for 704 cases during the past hospital year.

The Brown county hospital, Ainsworth, was dedicated October 5. It is a three story building and will accommodate 20 patients. Twelve rooms were furnished by private persons. Dr. A. G. Rasck is in charge.

Material for the addtion to St. Mary's hospital, Columbus, is on the ground and work will be pushed. The improvements will cost $150,000.

A sanatorium and bathhouse is being opened in Sidney by Dr. G. H. Crusen.

A $12,000 residence with all its furnishing has been deeded, a gift, to Sunnyside, a home for the aged at Hastings, by two brothers named Frahm.

A Nurses' Home building is under construction at the Nebraska university hospital.

THE SOCIETIES.

At the Gage county medical society, Beatrice, Sept. 20, Drs. E. L. Bridges, Omaha, and J. E. M. Thompson, Lincoln, presented papers. Twenty-four physicians attended.

The Burt county medical society's annual picnic was held in the park at Oakland, Sept. 29, in conjunction with the annual county fair, held at that place, and on grounds adjoining the park.

At a meeting of the Furnas county medical society held at Beaver City, Sept. 25, Dr. E. E. Cone, Oxford, was elected president, and Dr. R. D. Green, Beaver City, secretary-treasurer.

At the meeting of the Custer county medical society, Dr. J. R. Kalar, Anselmo, was elected president and Dr. Theodore Koefoot, Broken Bow, secretary. The meeting was devoted to the discussion of the cancer problem.

The Holt county medical society held its annual meeting in Atkinson on October 4th. A very interesting program was given and several physicians of note were present and participated in the scientific side of the meeting.

The Tri-State District Medical Society, which covers a territory including the entire states of Iowa, Illinois and Wisconsin, extends to the physicians of Nebraska a hearty invitation to attend its annual assembly at Milwaukee, Nov. 14, 15, 16 and 17.

As the Journal manuscript goes to the printer (October 20), announcements are out for the Seventh Councillor District medical society meeting at Geneva, Oct. 20, with ten numbers on the program, and for the Ninth Councillor District medical society meeting Oct. 24, at Grand Island, the program being mostly devoted to the cancer problem.

The Third Councillor District medical society meeting was held at Table Rock, Oct. 14, with thirty five doctors present and eight numbers on the program, as follows: "Endocrine Therapy", Dr. C. P. Fordyce, Falls City; "Infantile Eczema", Dr. J. F. Prendergast, Steinauer; "Present Status of the Treatment of Cancer", Dr. H. S. Forgrave, St. Joseph; "Newer Phases of Deep Roentgen Therapy", Dr. A. P. Overgaard, Omaha; "Group Medicine from the Standpoint of Surgery", Dr. H. M. Hepperlin, Beatrice; "Problems of the Lyon-Meltzer Biliary Diagnosis and Therapy", Dr. A. D. Dunn, Omaha; "Intestinal Obstruction", Dr. C. A. Roeder, Omaha; "Some Problems in Infant Feeding", Dr. E. S. Ballard, St. Joseph.

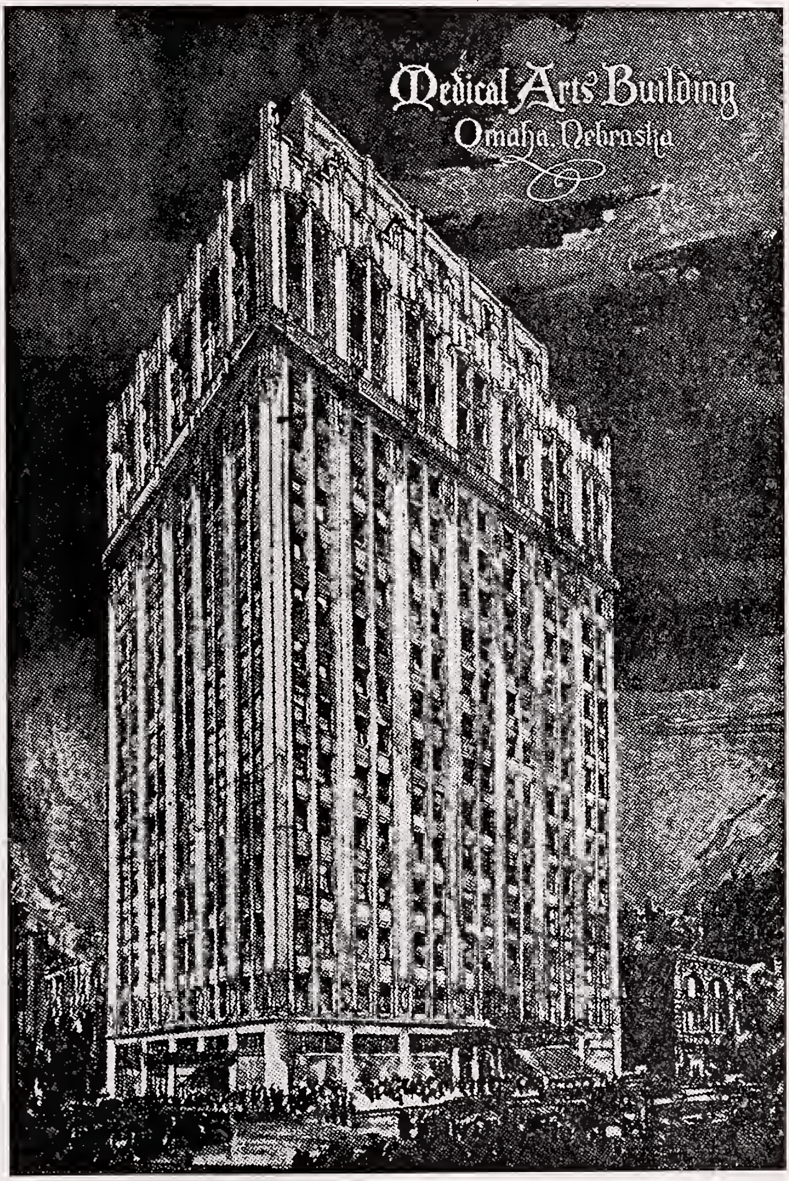
The Fourth Councillor District of the N. S. M. A. held its first annual meeting at Norfolk, Neb., Sept. 15th. There was a rather light attendance due to the threatening weather but a very good scientific program was given.

It was unanimously agreed to make the organization permanent with a meeting each year about midway between the meetings of the N. S. M. A.

Inasmuch as there seems to be a multiplicity of medical societies in this district, it was decided that a committee consisting of Dr. P. H. Salter, Dr. F. A. Long, and Dr. Jno. Buis, be instructed to attend the winter meeting of the Elkhorn valley medical society and ask that society to affiliate with and become, as far as practical, the Fourth Councillor District medical society of the N. S. M. A. It is believed that the best interests of the medical profession in this part of the state will be served by so doing as it will be a direct stimulus to all doctors in the district to join their respective county socities and automatically become members of the councillor district society as well as members of the N. S. M. A. This amalgamation, or affiliation, should not be difficult of accomplishment, as a majority of all members of both societies are residents of this district and those who are not, are members of the N. S. M. A. and have the best interests of that organization at heart. The officers elected were reported in the last issue of the Journal.

—A. E. Cook, Councillor.

Medical Arts Building



The Medical Arts Building which is now in course of construction in Omaha, will be a sixteen-story building of the most modern fireproof construction in every particular. It will be of steel and brick with terra-cotta trimmings, while the interior will be of Italian marble and mahogany trim.

The building location is on the corner of 17th and Dodge streets, across the street from the post office, on a car line direct from the depots, and on the Lincoln Highway, which is the western outlet of traffic from the city.

The first four floors of the building will be devoted to stores and shops. On the northeast corner of the ground floor, will be an exclusive prescription drug store. Beginning with the fifth floor, will be the doctors' offices. These are now being arranged according to the desires of the tennant and will be built to his order. On the 16th floor, will be the auditorium, reading room. writing room and council chamber, for the medical and dental societies. The auditorium will seat 500 people. A nice arrangement of these rooms, make it possible to throw them into one large room for social functions, big gatherings, etc.

On the roof of the building will be the pent house, and a portion of this space will be set aside for rest room, dining room and kitchenette for the doctors' assistants and secretaries. An emergency hospital of five beds with a nurse in charge will also be on this floor, where minor operations will be done, and where the patient can remain for the day. The nurse will have charge of the sterilization room where surgical supplies will be made up for the doctors in the building.

The convenience and benefits derived by the doctors in the building will be manifold. There will be no waste space, every foot of same being utilized, and made to bring a return to the doctor. This will defeat the high rental the doctor is now paying yearly in other buildings. There will be several "group systems" arranged where from four to ten doctors will occupy one suite, having but one overhead, expense. Special attention has been given to the needs of the X-ray men, sufficient power being provided to handle the largest machine made.

The Medical Arts Building will centralize the doctors work in Omaha, and surrounding territory. It will be an added attraction to patients who are now going elsewhere, to come to Omaha. The doctors of Omaha compare in ability and results produced with any in the United States, and there will be no good reason why anyone seeking relief should leave Omaha or go through Omaha to any other point.

FOR SALE—BARGAIN—Five room office, furniture, operating room in white, instruments, drugs, library. Good locality; retiring from practice. Address Journal, 609 McCague Bldg., Omaha.

NOTES ABOUT THE DOCTOR.

Dr. C. M. Pierce, from Chicago, has engaged in practice at Chadron.

Dr. N. T. Johnston, of Upland, is spending his vacation in California.

Dr. E. P. Bachle, Liberty, underwent an operation in Omaha last month.

Dr. A. C. Armitage has opened an office in Culbertson. He hails from Shenandoah, Iowa.

Dr. H. C. Nichols, formerly of Litchfield, has become associated with Dr. H. B. Boyden, Grand Island.

Dr. Louis E. Moon spent the month of October with Dr. Louis Hirschman of Detroit, in the further study of proctology.

Dr. E. P. Miller, recently an interne at Clarkson Hospital, has become associated with his father, Dr. J. W. Miller, Gibbon.

Dr. Guy C. Duff, Chicago, visited his brother at Pierce and looked after his land interests in that vicinity in September.

Dr. Harold Gifford was elected president of the Botna Valley medical society, at the recent meeting at Atlantic, Iowa.

Dr. B. A. Finkle, former superintendent of the Nebraska Orthopedic Hospital, has engaged in private practice in Lincoln.

Dr. J. Lue Sutherland, our well known friend from Grand Island, has moved to Los Angeles, where he will again engage in eye, ear, nose and throat work.

Dr. E. L. Hirsh, for several years surgeon at Taylor E. Lewis Memorial Hospital, Superior, has severed his connection with that institution and left Superior.

Dr. Frederick Dietrich, formerly of the Rockefeller foundation, has been elected head of the department of pathology and bacteriology of Creighton medical college.

The entire medical profession sympathizes with Dr. H. M. McClanahan, Omaha, in the loss of his life-partner, Mrs. McClanahan, October, 9th, after a prolonged illness.

Major L. R. Jones, formerly a practitioner at Scottsbluff, now in the army medical corps, has been transferred from Camp Kearney, Calif., to Hospital No. 72, Helena, Mont.

Dr. E. A. Weir, Portland, Ore., for many years a practicing physician at Chadron and well known to the older physicians of the Elkhorn valley, visited in north Nebraska in September.

Dr. J. H. Matthi, of Newberry, Mich., has become superintendent of the Nebraska Orthopedic Hospital, Lincoln. He was at one time connected with the Norfolk state hospital for the insane.

Dr. G. H. DeMay, Shelton, has gone to Kansas City to spend a year in St. Mary's hospital, preparing himself to specialize in surgery. His father, Dr. W. A. DeMay, has assumed the role of locum tenens during the son's absence.

Among those who attended the Phi Rho Sigma biennial convention at Omaha, Sept. 12, 13 and 14, were Dr. Richard C. Cabot, noted medical author, Boston; Dr. Frank Lydston, urologist, Chicago; Dr. A. L. Kendall, dean Northwestern University, Chicago.

MARRIAGES.

Dr. Raymond P. Carroll, Laurel, and Miss Marie Helen Maney, Omaha, were married, Sept. 20.

Dr. Glen E. Peters and Miss Paula Nordhues, Randolph, were married, Sept. 20.

Dr. Wallace E. Rose and Miss Alma Tayler, Kearney, were married in Omaha the last of September.

DEATHS.

Dr. Hiram Leslie Smith, the first physician and first mayor of Geneva, died at the latter place Sept. 18, in this ninety third year. About a decade ago he submitted to amputation of both limbs above the knee on account of senile gangrene. He was noted for having taken great interest in civic affairs and presented to the city of Geneva the books which formed the nucleus of the present public library.

BOOKS RECEIVED.

The Assessment of Physical Fitness. By Georges Dreuer, C. B. E., M. A. In collaboration with George Fulford Hanson. Cloth. Pp. 128 with xxiv tables. Price, $3.50 net. New York: Paul B. Hoeber. 1921.

Diseases of the Skin. By Richard L. Sutton, M. D. Cloth. Pp. 1132 with 969 illustrations and 11 colored plates. Fourth Edition, revised and enlarged. Price, $9.50. St. Louis: C. V. Mosby Co. 1921.

General Pathology. An introduction to the study of medicine. By Horst Oertel. Cloth. Pp. 357 with illustrations. Price, $5.00 net. New York: Paul B. Hoeber. 1921.

Basic Diets. By Edward E. Cornwall, M. D. Paper. Pp. 13. Price, $1.00. Brooklyn, N. Y.: Connell Press. 1921.

NEW AND NON-OFFICIAL REMEDIES.

Beebe Modified Buttermilk.—Buttermilk with Flour.—Buttermilk modified formula of Langstein and Meyer.—Buttermilk containing flour partially dextrinized by heat.—Each 100 Gm. contains approximately: total solids 9.7 Gm., carbohydrate 4.7 Gm., protein 3.3 Gm., fat 0.6 Gm., and ash 1.2 Gm. The acidity is stated on each package. Beebe Modified Buttermilk is offered as a means of combating intestinal fermentation by modifying the intestinal flora. Since it contains several forms of carbohydrates which have different periods of digestion, it is believed to afford an opportunity of assimilation without overtaxing the digestive powers. It is stated to be indicated in digestive disturbances of children and adults characterized by milk dyspepsia, fat intolerance, eczema and vomiting. Beebe Laboratories, Inc., St. Paul, Minn.

Ampules Ven Sterile Solution Mercury Oxycyanide, 0.0-16 Gm.—Each ampule contains 5Cc. solution, representing 0.016 Gm. mercuric oxycyanide, N. N. R. Intra Products Co., Denver, Colo. (Jour. A. M. A., Sept. 10, 1921, p. 863).

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CONTENTS

The Management of the Heart in Pneumonia, George P. Pratt, M. D., Omaha.... 365
Sudden Death in Infantile Eczema, Andrew Sinamark, M. D., Fremont, Neb.... 369
Acquired Splanchinoptosis, Miles J. Breuer, Lincoln, Neb.... 371
Indications for Cesarean Section With Special Reference to Its Promiscuous Misuse, Dwight C. Sigworth, S. B., M. D., Norfolk, Neb. 375
Dextrocardia With Presentation of a Case, Frank X. Rudloff, Battle Creek, Neb.... 377
Prolapse of the Uterus, C. A. Roeder, M. D., F. A. C. S., Omaha, Neb.... 378
Basal Metabolism and Its Practical Significance, M. D. Wohl, M. D., Omaha.... 383
Standardization of Nebraska Hospitals, Frank Conlin, M. D., Omaha, Neb.... 388
A Civilian Surgeon's Story of the Great War, H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb. 391
Book Reviews 393
EDITORIAL—
An Elkhorn Valley Number.... 394
Do It Now: One Year Has Passed.... 394
High Flying As a Cure for Deafness.. 395
The Cancer Campaign.... 395
The Present Status of Hospitals in the United States 396
Editorial Paragraphs 397
Case Report—Malignancy in a Centenarian 397
The Societies 398
Hospital Notes 400
Notes About the Doctor.... 400
Hymeneal 400
Necrological 400

THE MANAGEMENT OF THE HEART IN PNEUMONIA.*

George P. Pratt, M. D., Omaha, Neb.

The management of the heart in pneumonia (and by pneumonia I mean all types) has always been an interesting problem. In order to be convinced that there is no generally accepted plan of treatment, one has only to see patients with other physicians or read the voluminous literature that has been recently published. Many drugs have been recommended by many writers and about digitalis, the drug that is perhaps the most universally used, there is no general agreement concerning the dosage, the time of administration or the preparation. There remains even now some question as to the cause of death, the amount of pathology to be found in the heart, and the disturbances in the circulatory and respiratory systems. Stuart Hart of New York in an article published in 1919 questions the frequency of heart failure as the cause of death in the recent epidemics, and rather condemns the use of digitalis. In 1899 Romberg and his associates after much study and experimentation arrived at the conclusion that the circulatory failure invariably followed the exhaustion or paralysis of the vasomotor center in the medulla. For some years later this toxic vasomotor theory held full sway to the complete exclusion of the previously accepted idea of myocardial degeneration. MacCallum in 1914 demonstrated experimentally that the heart was still active after marked circulatory failure in diphtheria. So that in 1916 Tice states "with the evidence at hand it is apparent that no definite statement can be made further than fatal pneumonias die with the clinical manifestations of a circulatory failure, the result of toxemia and septicaemia; but whether the myocardium or the vasomotor apparatus is chiefly involved remains in doubt. Perhaps it may be determined that there are various groups in which one or the other predominates while in some both myocardium and vasomotor systems are concerned." The circulatory disturbances in the pulmonic circuit although recognized were not seriously considered and all the study was directed toward the systemic circuit.

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*Read before the Elkhorn Valley Medical Society, Norfolk, Neb., July 13, 1921.

This subject was chosen and the above prologue reviewed to emphasize the necessity of bringing out and establishing in this paper and in the discussion as many facts as possible from a study of the late epidemics. As the chief medical officer of Evacuation Hospital Number One in the American Expeditionary Forces where I had the good fortune to have as a consultant Dr. Harlow Brooks, I became extremely interested in this procedure and carried on a rather intensive clinical study of the heart condition in pneumonia.

First let us review some of the more recent contributions to the literature concerning the heart as it was found at postmortems, both grossly and microscopically, in order to form an opinion of the damage done to the heart muscle.

Symmers from a study of autopsies found the right side of the heart dilated, the auricle especially. He noted the heart muscle to be diffusely bluish, with its capillaries distended and exceptionally showing cloudy swelling.

Nuzum and his co-workers at the Cook County Hospital found the right heart dilated and in two instances the tricuspid valve rings measured 13 and 14 cm. respectively from cut edge to cut edge.

Stone and Swift in 55 necropsies found right sided dilatation in 31 instances and dilatation of both sides in 7 instances. They observed grossly definite parenchymatous changes in many cases.

Lyon reports from 56 autopsies that 27 times the right heart was moderately or slightly dilated, particularly the auricle. He, however, observed no gross pathologic changes in the heart muscle.

Bakwin reports the gross findings from 106 necropsies as follows: dilatation of the heart 43 times, 31 times on the right and 12 times on the left side. There was cloudy swelling of the myocardium in 51 cases.

Lucke, Wight and Kime report from 126 autopsies that in 115 cases the right heart presents more or less dilatation and in a number of insances the left was likewise relaxed. In 89 cases cloudy swelling was diagnosed grossly and confirmed microscopically.

Hamburger in a careful electrocardiographic analysis of non-fatal cases arrives at conclusions of a definite myocarditis and irregularities in the pathways of conduction.

Finally Brooks in an analysis of 1651 protocols in the American Expeditionary Forces found inflammation or degeneration of the heart muscle 748 times and states that pneumonia from the standpoint of fatality may be considered pathologically as well as clinically a two system disease: namely of the respiratory and circulatory organs. When we consider the immediate termination alone it is practically always circulatory and in but few instances does the end come from other than an apparent cardiac failure.

In view of the fact that the preponderance of evidence is for pathological changes in the myocardium we can conclude when we come to a study of its mechanism that we are dealing with a damaged organ having both a lower reserve and a lower rest force.

When we consider the physiology we shall be more concerned with the pulmonic circuit and the right heart. It must be remembered that there are many cases of left heart failure, but the signs and symptoms are well known and quite obvious to any careful physician. Nor shall we discuss especially the treatment, as the management of the former serves equally well for the latter.

A measure of the reserve and rest force, or the ability of the right heart can be arrived at from a consideration of the physiology of the pulmonic circuit. Let us consider the force against which the right heart acts normally. Wiggers has shown that the maximal pressure in the lesser circuit is 31.3 mm. of Hg. and that diastolic pressure is 5.9 mm. of Hg. leaving the pulse pressure of 25.4 mm. of Hg. Further when we expand our lungs fully we compress the smaller interalveolar capillaries and with expiration they are relaxed and this mechanical action of respiration with its associated changes in peripheral resistance contributes from 32 to 40% to the maximal pressure and depresses the minimal pressure 10 to 20%. So, as a result the right heart has under normal conditions only a very low pressure to work against and in this is aided materially by the mechanical action of respiration. Conclusions are justified that the reserve and rest force of the right heart are very small and its capacity for work in health and disease can not be evaluated in terms of the left heart capacity. Unfortunately the right heart power has usually been considered and based on the blood pressure findings of the left side. This lesser force of the right side is likewise born out anatomically in that the musculature of the right heart is smaller than the left so that in cross section it measures as 1 to 3. We also know that the cardiac failure which concerns the right heart always has a grave prognosis.

Wiggers has demonstrated that the clamping of a single branch of the pulmonary artery in animals causes an increase in the maximal pressure both within the right ventricle and in the pulmonary artery. Similar studies with neutral oil injections into the femoral vein were carried out and while smaller doses are without effect on the mean arterial pressure, the pressure curves from the right ventricle showed typical signs that the right heart was contracting against an increased resistance. Larger doses increase the pressure in the pulmonary artery. These experiments indicate that wherever an increased resistance occurs such as must follow pulmonary embolus, sclerosis, and the infiltration of pneumonia the right heart, having a greater afterload to overcome, must respond with a more vigorous action. To demonstrate this increased resistance Gross has injected a barium sulphate gelatin solution into a lung in which the upper two lobes were the seat of a lobar pneumonia. These were then hardened in formalin and stereoscopic skiagraphs taken for more careful study. The capillaries of the lower noninflammatory lobe were found tremendously dilated to 2 or 3 times their normal calibre and the whole lobe presented the picture of compensatory arterial dilatation. The middle lobe showed general lack of injections, only several large branches, moderately compressed, appeared and these ended abruptly at the inflammatory area. In the upper lobe a moderate preservation of its circulation was evident but there existed unusually clear spaces and even the injected vessels were somewhat narrowed and compressed.

These physiological and pathological observations bear out the clinically accepted facts that every case of pneumonia begins with a right heart strain. This strain comes early and is of sufficient moment seriously to influence the prognosis, and depending largely on the ability of the right heart to battle the storm, will rest the fate of the patient. The compensation in the pulmonic circuit is only maintained by narrow limits of reserve and rest force, in health, and in pneumonia, associated as it is with a maximal heart strain plus degeneration of heart muscle, right sided dilatation may occur with but slight warning and unless vigorously treated is rapidly fatal.

The signs and symptoms of the right heart failure should then interest us. They are very difficult and often absent up to the break. Subjectively, precordial distress, a sense of weakness and air hunger are important and significant signs. A sudden increase in cyanosis, dyspnoea or edema of the lungs is highly suggestive of right heart failure. The area of percussion dullness especially to the right will be increased and fluoroscopic examination will show early a right auricular dilatation. Jugular engorgement with positive venous pressure is significant but subject to intrathoracic pressure factors. A weakened second pulmonic sound is an important auscultatory finding. Up to within a few hours of the failure of the right side, the left heart sounds may be normal, the pulse pressure average and the peripheral circulation well maintained.

The question of moisture in the lungs with its anoxemia is important and does occur with left heart failure in the presence of a competent right heart, but Mackenzie also associates the condition with the right heart strain. Starling has shown that by raising the pressure in the pulmonic circuit to 50 mm. of Hg. for a few minutes, there was a loss by filtration of from 10—15% of blood volume. Bolton working in Starling's laboratory has shown that stagnation of the blood alone with either plethora or raised capillary pressure will suffice to produce edema.

Physical strain because of its relation to cardiac integrity becomes now an important factor in the management of pneumonia. It has always been a custom to keep patients quiet and free from even the slight exertion attending a physical examination during the later stages of the disease. There is the danger that earlier in the disease in our eagerness to percuss out too finely the extent of lung involvement, we will at times do the patient an injustice. For the sake of the heart the pneumonia case should be disturbed as little as possible. Meddling hydrotherapeutic measures, too frequent and too active, are to be condemned. Often these cases are overtreated and I have seen too frequent sponging and packing provoke an acute dilatation of the heart with fatal results. Mental strain should be kept at a minimum. An excitable or talkative nurse, noisy surroundings and unmanageable relatives are undesirable factors in the care of these cases.

This extreme care of the circulatory system should be carried throughout convalescence. The patient should not be allowed to sit up in bed until seven days after the temperature is normal. He is then permitted to sit up and the heart action noted. Any irregularities or weakness of the pulse or a sharp exaggeration of sinus rhythm is a signal for a return to complete rest. When there are no cardiac disturbances and the patient progresses well after another seven days, he should be allowed to get out of bed and gradually be up and about.

The older physicians and authors felt that death in pneumonia was due to heart failure and it was their custom quite generally to use digitalis early and throughout the course of the disease. Following Romberg's work in 1899 there was a gradual reaction against this method on the ground that we were stimulating before the necessity had arisen and that a more scientific procedure was to wait for early signs of cardiac failure which meant left sided failure and then stimulate as needed by intravenous injections. All these efforts were directed toward the systemic circuit so that Gibson's rule was formulated and given as an indication to use digitalis. And now as a rather general procedure from army and civil experience we have gone back to the older methods. In a condition so prevalent as pneumonia, in which the percentage of mortality has varied very little since our earliest treatment and in which the refinements in management are of but slight benefit one has to be guided in judging results by impressions rather than by figures. These clinical impressions and the knowledge that the right heart is not especially capable, that the normal work in pumping blood through the pulmonic circuit is very slight as compared with the left side, that a lung inflammation increases this load quite materially and that there is a loss of power due to myocardial degeneration, convinces us that there is in the majority of cases a load on the right heart which comes early in the disease and calls for digitalis therapy. We feel that we are committing a sin of omission when we leave our pneumonia patients with this initial right heart strain untreated. Furthermore because of the impression that digitalis works to a better advantage, in the absence of myocardial degeneration which is more pronounced later, we believe that the return to the older procedure of the early and continued use of digitalis is justified.

Concerning the preparation there are many good ones and every physician has his own choice. My personal preference is a good standardized tincture, but when hypodermic medication is demanded, I have recently been using digifolin. The dosage, of course, varies with the different degrees of circulatory embarrassment and should be regulated according to the improvement and failure. In some cases one may begin with five drops of a good tincture, three times a day, and in other cases daily doses of twenty drops every four hours for four doses, while in a more severe case larger doses according to the methods of Eggleston may be used. Every case is a clinical entity and even to suggest a routine dosage is impossible. It is well to know that patients who are digitalized even slightly will respond more quickly and efficiently to any emergency digitalization, and one may expect an effect from oral administration in a few hours. After a complete digitalization the patient may be held with smaller doses of fifteen to twenty minims every twenty-four hours. It is my intention to establish the fact, that the early treatment by digitalis is essential and should be given certainly as soon as lung involvement can be diagnosed and better even in anticipation of the condition.

Some may suggest strophanthus, a drug with which I have had no personal experience. It has occurred to me that its use has little advantage over digitalis, and its instability and varying degrees of absorbability make it rather unreliable.

Atropin is of value when pulmonary or glottic edema threatens and as an adjuvant of digitalis. Digitalis, besides affecting the heart muscle, has a stimulating action on the vagus nerve centre and in certain cases where it has been pushed too far, with a block effect, the administration of atropin may counteract this action.

Camphor and caffeine in hypodermic injections and the latter as black coffee per rectum can be recommended in the most severe cases when the heart requires additional stimulation, but they are not suitable for persistent use.

Strychnine is rapidly becoming unpopular and is of no value as a heart tonic in pneumonia. It has the tendency of making the patient irritable and restless, often to the point of straining the circulatory system.

Morphine and codeine must be administered with caution and only for the relief of cough, pain and extreme restlessness to promote sleep when simpler methods have failed with the idea of conserving the circulation and cardial energies.

Venesection is indicated only in the early stages of the disease. In the later stages its therapeutic value is questionable. Bleeding has become rather unfashionable of late but in plethoric individuals with hypertension and early cyanosis it occasionally has a highly beneficial effect. When, with the indications, a venesection is decided upon, a rather generous bleeding should be favored and a full pint should be removed in the average case. .

SUMMARY.

(1) A large percentage of pneumonia deaths are due to heart failure associated with myocardial degeneration; (2) very often it is the right side which fails because of its very limited reserve capacity; (3) as much of the strain placed on the right heart occurs early in the disease and because right heart failure may prove rapidly fatal, we advise the immediate administration of digitalis in preparation for impending circulatory emergencies.

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SUDDEN DEATH IN INFANTILE ECZEMA.*

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It has long been known that cases of infantile eczema may terminate in sudden death. This has led to the supposition that there is some relation between status lymphaticus and infantile eczema.

In 1912 Feer, (1) the German authority on children's diseases, summarized the literature, stating that it was mentioned as early as the seventeenth century. Gaucher and Castenholz believed the cause of death to be too rapid healing from vigorous treatment. Castenholz found that he had no more deaths after using a milder form of treatment. Epstein blamed obesity for the sudden deaths. Kaufmann had suggested that possibly status lymphaticus is in these cases only a symptom of some underlying constitutional condition. Some had explained sudden death in eczema as a result of acute sepsis, as organisms had been found in the blood. Feer believes that this may be a factor, but only an exciting one, in the same class as hot packs, vigorous treatment, anesthetics, etc.

Feer reported 30 cases of acute death in eczema, with 13 autopsies, and 10 out of the 13 had status lymphaticus as a post mortem condition. He concludes with the statement that possibly eczema may give rise to some sort of anaphylaxis, in the same manner as an injection of serum.

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*Read before the Elkhorn Valley Medical Society, Norfolk, July 13, 1921.

The pathology of status lymphaticus has been described minutely by Symmers, (2) from the examination of a large number of cases at Bellevue hospital. His findings are as follows: The lymph cells of the lymph nodes of the spleen, intestine and elsewhere, show hyperplasia. There is hypoplasia of the cardiovascular system, and developmental deficiencies in general. The spleen is not enlarged, but is usually hyperplastic, often to an extreme degree. In the lymph nodes, the lymphocytes show a marked increase, and cases of sudden death in children sometimes show necrosis of the follicles.

There has been practically nothing written on this subject in recent literature. In 1917 a case was reported in the Canadian Medical Journal. (3) It was almost identical with the appended case, except that death came a few hours after the onset of choking, cyanosis, and convulsions. The thymus weighed 25 grams.

Hichens of England reported 6 cases in 1913, (4) but he admits that only two of them could be considered typical. He is inclined to believe that rapid healing of the skin is the cause of death. He thinks that the secretion may contain a substance which is "dammed up" by the healing process. This theory is discredited by Feer.

Work has recently been done which seems to show that cases of infantile eczema are found to sometimes have an anaphylactic reaction to specific proteins, such as breast milk, cow's milk, various albumens, etc. (5)

The thyroid has been said to be involved in some cases. (6) In these cases, there is deficient fat metabolism, due to a low thyroid secretion. A case is reported as having been cured by giving thyroid extract.

Other diseases having a more or less close relation to the thymus are: Addison's disease, diphtheria, tetany, eclampsia, myasthenia, and osteomalacia.

In puppies, the thymus has been removed, with the result that they became fat, decreased in intelligence, the bones softened, and finally they died in coma. The brains showed edema. It has therefore been suggested that sudden death may be the result of pressure upon the floor of the fourth ventricle, caused by edema.

There is no doubt that the cause of death in these cases is due to a condition of status lymphaticus, whatever its relation to eczema may be. The pathology of both status lymphaticus and eczema is obscure. The idea that status lymphaticus in some way causes a susceptibility to an anaphylactic shock seems a plausible one.

Illustrative case:

J. S. B., a male, age 4 months and 1 week, was admitted to Dr. Abt's service in the Sarah Morris Children's Hospital of Chicago, on May, 5, 1920, as a case of infantile eczema. His face, scalp, body and legs were covered by an extremely severe type of eczematous eruption. The onset dated back to three months before admission, and it had become progressively worse. Various treatments had been tried with no effect. He was breast fed for three months. Thereafter he was on supplementary feedings, a milk and barley water mixture, with 1½% dextromaltose.

His past history was negative. Examination revealed nothing except the eruption. He was especially well nourished. The white blood count was 24,600 with 9% eosinophiles. With this exception, laboratory findings were negative.

The treatment was the local application of Lassar's paste, which was prepared without the salicylic acid. He was put on a diet of Eiweiss milk with 3% dextromaltose.

The patient's condition improved rapidly while in the hospital. The temperature on admission was 99.4° and remained practically normal till the third day, when it rose to 102°, but fell to normal again in the evening.

At midnight following the third day, the baby was found gasping for breath. A small amount of mucus had been vomited.

Oxygen inhalations were given, also a hypodermic injection of camphorated oil. The patient died ten minutes after the discovery, with a temperature of 108.4°.

An autopsy was performed by Dr. O. T. Schultz, in which an enlarged thymus weighing 30 grams was found. It extended 4 cm. below the sternal notch, the lateral border on each side reaching the hilus of the lung. From the sternal notch a narrow prolongation extended upward into the neck 2 cm. The tissue was pale. Although the superior cava was distended, the thymus did not appear to have caused any pressure upon the vessels. The internal mammary veins were not distended. The right side of the heart was distended, but otherwise normal.

Microscopically the thymus was composed of large lymphoid lobules separated by narrow stroma bands. Hassall's corpuscles were large and numerous. The thyroid was normal.

A culture of the heart's blood remained sterile.

The spleen weighed 32 grams. On section, lymphoid tissue was prominent. Microscopically, the lymph follicles were numerous and closely placed. They were not excessively large, and only a few had prominent germinal centers. The tissue between the follicles was congested. The kidney and adrenal showed congestion of the medullary tissue, otherwise normal.

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ACQUIRED SPLANCHNOPTOSIS.*

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The term splanchnoptosis is applied to two classes of cases, differing somewhat from each other. There is the congenitally splanchnoptotic individual, or the so-called splanchnoptotic habitus, with long, narrow abdomen, general atonic condition of all musculature smooth and voluntary, and usually associated with neurosis. The following remarks do not fully cover this class of case. They apply to, and are based upon a study of cases of the acquired type, in which a patient, previously normal, loses the proper tone of his muscles and correct position of the viscera.

A few words regarding the etiology of this condition, will enable us to see the rationale of its diagnosis and treatment. There are two principal factors concerned in maintaining the correct position of the abdominal viscera. The first is an adequate intraabdominal pressure, the maintenance of which depends practically altogether upon the proper tone of the muscles of the abdominal wall. The second is an adequate amount of fat, omental and subperitoneal, which, acting as pads and wedges, assists in keeping the various organs in their places. The influence o fthe so-called ligaments is negligible; these structures are too weak and flimsy to be of real service as supports; and any strain placed upon them, merely results in an increase in their length.

A loss of tone of the abdominal muscles and a decrease in intraabdominal fat, result usually from two causes: protracted and debilitating illness with insufficient time for convalescence; and repeated childbirths in close succession, with insufficient rest between. The muscles of the anterior abdominal wall lose their tone, and become loose and flabby; instead of functioning as muscles, the abdominal wall acts as a yielding membrane. The same effect is obtained, as when a thin rubber balloon is filled one-third full of water; the upper portion is elongated and empty and the entire contents are in the lower portion, which bulges broadly at the bottom. When this condition occurs in the human abdomen, the various organs, no longer held against each other, and mutually supporting each other, gradually gravitate toward the pelvis, pulling upon and stretching their ligamentous and mesenteric attachments.

The result of this mechanical condition on the general health is profound. The lack of support in the front of the abdomen produces a sensation of weakness, resulting in an attitude of physical incapability, amounting often to helplessness. The patient is able to undergo little or no physical effort without exhaustion. The intraabdominal sagging is responsible for a stasis in the circulation of the splanchnic area, which in turn upsets the balance of vasomotor conditions all over the body. As the viscera drop in the abdomen below their normal positions, there is a tension on the blood vessels supplying them; both arterial and venous circulation is interfered with. The most marked result is a venous congestion in the various viscera, due to the increased height through which return venous flow is compelled to go, to kinking and twisting of vessels, and to poor vascular tone.

This venous congestion is the source of multitudinous symptoms, as it interferes seriously with the proper functioning of each individual organ. For that reason, the presenting symptoms with which these cases appear, are many and varied. Probably the most common occurrence is to have patients come in complaining of the stomach. In this connection, it is interesting to note, that while a stomach may be fallen down into the pelvis, the pain and distress referable to it are always felt in the epigastrium. Symptoms felt lower down, and usually attributed by the patient to the stomach, can be traced to difficulties in the intestine.

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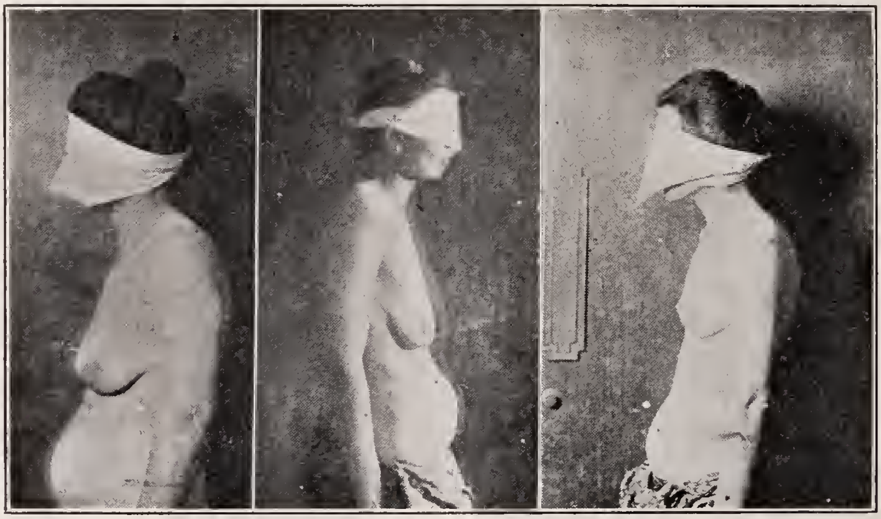
*Read at a meeting of the Elkhorn Valley Medical Society, Norfolk, Neb., July 13, 1921.

The appetite is poor; the secretion and emptying of the stomach are interfered with. As a result, the patient eats little, assimilates less, and becomes emaciated. This, together with the pain, often raises suspicion of carcinoma. Chronic constipation, amounting at times to severe obstruction and tympanites, with their associated pain and distress, are commonly found. The kidneys may be enlarged, tender, and considerably below their normal position. Albuminuria, intermittent hydronephrosis, and even nephritis and enlarged tender liver, are among the findings. In case of the liver and spleen, the enlargement is moderate, never extreme, unless causes other than venous congestion due to splanchnoptosis are concerned. In cases traceable to repeated childbirths, a relaxation of the pelvic floor is associated, with its uterine malposition, and symptoms due to pelvic congestion.

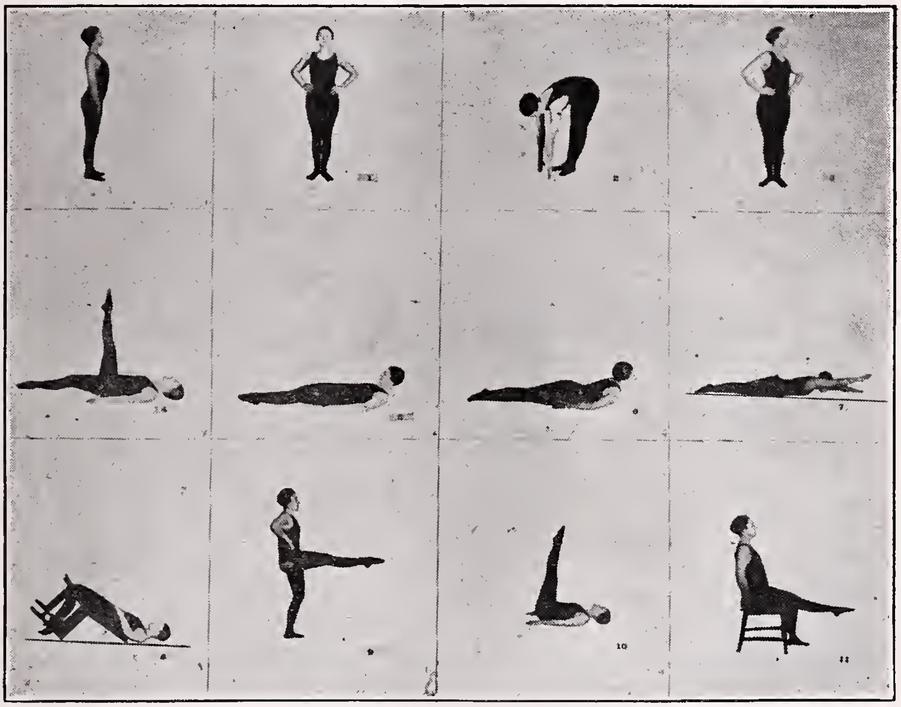


Acquired splanchnoptosis occurs by far the most frequently in married women who have born children. However, men and nulliparous women are by no means exempt from it. During the past year, two cases in men have come under my observation.

The diagnosis involves two factors: The recognition of the condition, and the elimination of other conditions such as malignancy, appendicitis, gastric ulcer, nephritis, etc. The former factor is easy, the latter difficult. The flabby condition of the anterior abdominal wall, usually a separation of the recti, the bulging of the lower abdomen and retraction of the upper portion; the congestion and malposition of the kidneys, liver, spleen, and pelvic organs, revealed by palpation; the history of interference with the function of various abdominal organs; and history of protracted illness, repeated childbirths, etc., with subsequent loss of weight or moderate emaciation, leaves little doubt as to the existence of this condition. Xray is of assistance, and of interest, but is not indispensable.

But, to convince oneself that malignant, inflammatory, or infectious disease, as suggested by the distressing symptoms, does not exist, will tax all of one's diagnostic resources; and the most thorough and careful examination is necessary for this purpose. Such diseases may and do have splanchnoptosis associated with them; it would certainly be gross neglect to allow the splanchnoptosis to mask the more serious condition, and neglect its proper care. The plan of treatment which is found successful in uncomplicated, secondary splanchnoptosis, will not suffice for the care of malignant, infectious, or other inflammatory lesions.

It will be clear from the foregoing remarks on etiology and pathology, that the surgical method of treating ptosis of an abdominal organ, by suspension from the abdominal wall, or other solid support, is neither effective nor logical. The ptosis is the penalty paid by the human race for its erect posture. Its causes are too deeply bound up with the patient's life and habits to make it possible that some little mechanical trick of the surgeon can send the patient away relieved of all further care and responsibility. Observation of results in practice has borne out the a priori conclusion; and the method of sewing a kidney or stomach up in place, is no longer followed. The attachment thereby formed, quickly increases in length, and soon the organ is back where it was before; unless the rest and diet following the operation were sufficient opportunity for the patient's system to regain its proper tone. Furthermore, the malposition is not a cause, nor even a disease, but merely an incident.



I have the same criticism to make of the method of treatment which depends on wearing a belt or abdominal supporter. Our purpose in treatment is not the mere mechanical support of a dead weight; it is the correction of a defect in biologic function. The wearing of a belt has the same effect on the abdominal muscles, as the wearing of a splint has on the muscles of a limb; and the ultimate result is to make the condition worse instead of improving it. This must be understood as a general statement, emergencies may arise when the temporary use of a crutch for the broken down abdomen is necessary.

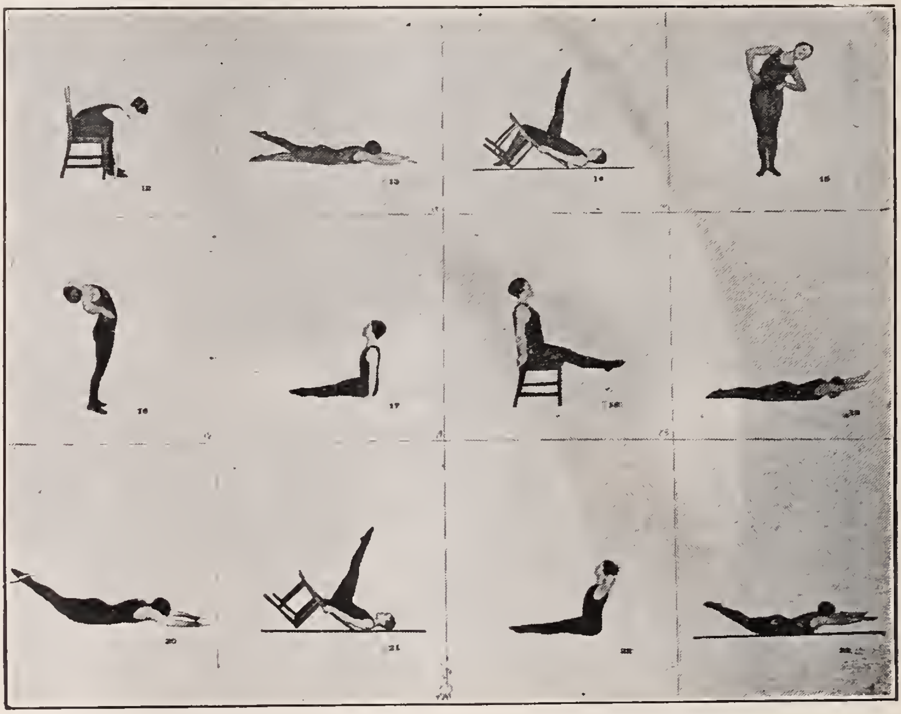
Our aim in treatment is two-fold: First to build up the patient's strength and tissues, especially the abdominal fat; and second, to build up the tone of the abdominal wall.

The beginning of the treatment is doubly difficult, as it involves breaking into a vicious cycle. The poor function of the patient's abdominal organs and muscles produces poor appetite and malaise. The latter in turn results in a loss of weight and further flabbiness of all muscles and a still greater degree of ptosis.

It cannot be denied that the psychology of this treatment constitutes its most important part. The physician must have sufficient personality to influence the patient to carry out the irksome and protracted treatment. This is all the more necessary inasmuch as these cases are all to some degree neurasthenic. Some are markedly introspective to their ailments and lacking in backbone. It is safe to say that the prognosis depends far more on the physician's personality and the patient's character, than it does on the extent of the pathology. The objections from the patient, that she cannot possibly eat the articles of diet prescribed, that she does not have time to take the rests that are required, that she can never make herself go through the ridiculous exercises, must all be overcome. Handling a patient's "nerves" is a part of the doctor's job. He is shirking it if he tells the patient. "If you don't follow my directions, I cannot do anything for you!"

It must also be remembered that there are no two cases just alike. It will not do to make up a routine treatment and expect to get a large percentage of good results by running patients through it, as through a mill. Every statement made in this paper will, in the individual case, have its exceptions and modifications.

The treatment may be conveniently divided into the following heads: Diet, Rest, and Exercise.



The usual regime of forced feeding, such as is useful in tuberculosis and other debilitated conditions, is applicable here. The same selection of tissue and fat building foods, with a care to the preservation of the important biological properties, whether we call them vitamines or something else; and the same routine of feeding frequently and in quantities sufficiently small to avoid overtaxing the stomach, applies here. Only, it is not sufficient to tell the patient that she must drink lots of milk and eat plenty of eggs. Write out a diet list for her; hand her in writing all the details of what you recommend in regard to what is especially valuable. Call attention to foods that are not particularly valuable in a nutritious sense, though necessary for tonic and laxative purposes, or for the sake of adding interest to the meals. Especially, make the effort to rid the patient of the superstitious idea that there are certain foods that do her harm. Advise definite hours at which the patient should eat, and definite quantities to be eaten. Put these things, together with your other directions, in writing, and keep a carbon copy for your own future reference and comparison.

The proper balance between rest and exercise, requires adjustment for each individual patient. In the beginning, the rest should be far in excess of the exercise; and in the course of weeks and months, the rests can be decreased, and the exercises increased. The rests are necessary in order to conserve the energy necessary for tissue building, and to give overstretched muscles a chance to recover their tone. As the abdominal muscles in these cases have been stretched for long periods past their maximum capacity, it is imperative to allow them a period of rest before attempting exercises to increase their tone.

The first thing that should be insisted upon, is a proper number of hours in bed at night. The length of time required in bed during the next day, between 7 a. m. and 10 p. m. will vary from two to six hours; and in some cases it may be necessary to keep the patient in bed for the whole 24 hours, for a short period. The rest in bed during the day, means lying flat on the back, perfectly relaxed, and with the mind as thoroughly relaxed as the body. This is not a condition which the average patient can assume on the first day, and it is the doctor's duty to teach her. However, most patients will ultimately learn to spend the time either in sleep, or in a sort of half doze, which is just as valuable. Needless to say that neither reading nor sewing, nor worrying about the waiting tasks, are permissible, if the treatment is to be successful.

It has been found useful to raise the foot of the bed from 6 to 10 inches on blocks, for the first three or four weeks. Gravitation will contribute considerably to correcting the position of the viscera, if allowed plenty of time. Then, the position has a very encouraging effect on the patient's morale; and morale is a factor in the treatment without which we cannot get along.

The exercises which I have found useful in bringing back the abdominal muscles to an adequate degree of tone, are shown in the illustrations. The arrangement is especially emphasized as an effort to graduate them in such a way that they progress from those requiring little effort and endurance and producing but little strain, to the more difficult and strenuous ones, through easy degrees, and in such a way as to avoid monotony. I place no little value on the illustrations which I have made, and which I hand to the patient. Constantly looking at a well formed model, assuming the attitudes easily and gracefully, is a stimulus for the patient toward better effort, none the less powerful for being unconscious.

Some other little matters may be mentioned. Very few of these patients breathe properly. They should be given instructions in breathing, and assigned exercises to develop it, both for the purpose of increasing the oxygen supply to the tissues, and of developing the muscles concerned.

There are certain records which should be kept by the patient. She should weigh herself once a week, with due precautions against variations due to differing scales, different clothes; meals, etc., and should record it systematically. During the first few weeks, food eaten, medicines taken, bowel movements, and similar matters, should be carefully recorded; both for the benefit of the doctor, and for the value that the making of the record has in holding the patient down to directions.

Drugs do not take a prominent part in this method of treatment. Sometimes they may be necessary as a handle for prying into the vicious cycle. Tonics and stimulants for the appetite will frequently be found advisable. As most of these patients are inveterate users of laxatives and cathartics, they should be taken strictly in hand on this matter. It is well to err a little toward the deficit than toward the excess in the matter of laxatives in this particular condition. It should be kept in mind that whatever laxatives are given, they should be administered in small doses, each dose being in itself insufficient to produce a bowel movement, but with such frequency and regularity that the proper habit is established in the bowels. Large and severe doses of cathartics are harmful.

It will be remarked that the above treatment could be best carried out in a special institution. This is quite true; but it is fully as true that the percentage of these patients who can afford to spend several months in such an institution, or even in an ordinary hospital, is very small. In fact, the disease is characteristic of the class who are not situated sufficiently well financially to afford more than everyday necessities; and who must put in every day, working for what they possess. I have by this time observed a sufficient number of cases to be convinced that recovery in their own homes, under the care of their family physician, is possible.

INDICATIONS FOR CESAREAN SECTION, WITH SPECIAL REFERENCE TO ITS PROMISCUOUS MISUSE.*

Dwight C. Sigworth, S. B., M. D., Norfolk, Neb.

In choosing this subject I was thinking more particularly of the contraindications to Cesarean section than of the hackneyed, oft repeated list of indications. I should like to call your particular attention to the problems which confront the medical man who is primarily a general surgeon or perhaps even an internist. He is not a specialist in obstetrics. He takes the cases that come his way and let it be said to his credit that he takes care of them to the best of his knowledge. That this best is not good enough is shown by a statement made by Polak of Brooklyn (1) that the mortality from childbirth places the United States fourteenth on the list among sixteen leading civilized nations.

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The average practitioner has a more or less hazy knowledge of the practical procedures of obstetrics such as dilatation, version, craniotomy and high forceps. He has done several Cesarean sections or perhaps he has only seen several done. In any case he thinks that Cesarean section is a quick, easy, spectacular way of getting his two patients and himself out of trouble. Either he never knew or is ignoring the fact that the average mortality obtained by the best technicians in the country is over 10% for unselected cases. Polak in a personal communication says, "Some time ago I was interested in this matter and wrote to DeLee, Cragin, Hirst, Williams, Webster and several others who had done a large series of Cesarean sections and collected something over 2000 cases with a mortality of over 10% and a morbidity of over 30%." This, as you know, is several times the mortality of the average laparotomy. The average practitioner's indications are not very clear cut and many times his judgment is biased more than is right by his desire to get things over quickly. As Williams (2) says, "Abdominal Cesarean section requires only a few minutes of time and a modicum of operative experience; while the more or less expectant treatment often implies active mental exertion, many hours of patient observation and frequently very considerable technical dexterity." Gentlemen, is it not worth "active mental exertion, many hours of patient observation and very considerable technical dexterity" in order to avoid a 1 to 10% chance of killing the mother?

It is very difficult to determine the ideal ratio of Cesarean sections to total deliveries. The men who are doing the most Cesarean operations are the specialists who have many more pathological deliveries than the general run would indicate. DeLee of Chicago says, (3) "In a general way we find Cesarean section indicated in less than ½ of 1% for the ordinary run of cases." Polak (4) in a study of 1000 cases thinks that from 0.8% to 1% is the right ratio of Cesarean sections to deliveries. All of these are among city bred women in whom Hirst of Philadelphia (5) has found a much greater frequency of contracted pelvis than in country bred women. Contracted pelvis forms the indication in 66% of Holland's series of 97 cases. Thus the inference is that the most common indication for Cesarean section is less frequent in the Elkhorn Valley.

Is there some other legitimate indication found by the surgeon in the smaller hospital, which is not found by the obstetrician in Chicago or Philadelphia or New York? A representative obstetrician of each of these medical centers and also one of Baltimore, in personal communications (6) all agree that too many Cesarean sections are being done in the United States today. I have been unable to find any special indication applicable more frequently to the type of case which we see in Nebraska.

Why is so simple an operation attended by a mortality varying in different large clinics from 2 to 8% and in general over 10%? The answer lies largely in the fact that our general practitioners who do a large percentage of our obstetrics are not sufficiently trained in school to do efficient pathologic obstetrics and thus avoid the high mortality of unselected Cesarean sections. It is well-nigh impossible to make anything better than a well trained male midwife with the clinical material at hand in the average medical school (7). Let your minds go back to your medical school days. Were you ever allowed to apply forceps to a living baby? Did you ever dilate a cervix, grasp a foot and do a version? Certainly the students are few who have done Cesarean sections. The schools are doing their best with manikins but the student must otherwise get experience as an interne or else on his private cases often without supervision. This, of course, entails an increase in morbidity and probably in mortality until experience can teach the young man better technic. A part of the answer to the question of high mortality lies in cleanliness. The mortality of Cesarean sections can be very materially reduced by the conscientious adherence to the fact that ideal results are only obtained where there is a minimum chance for infection to occur. The prime requisite for success in Cesarean section, is training of the student until he can tell beforehand whether a given patient will need the operation. Then he can choose his own time and he operates before labor or at the latest in its early hours. In the elective Cesareans done by these same men, (DeLee, Cragin, Hirst, Williams, Webster and several others) in selected cases either before labor or during the first stage, the mortality was a fraction over 2%.

It should go without saying that the patients should be in the best possible physical condition before Cesarean section. Eclamptics in particular who are profoundly toxic should have the benefit of bleeding and substitution of an equal quantity of a weak alkali such as Ringer's or Fischer's solutions. If the practitioner unavoidably finds the case exhausted or infected, then Porrohysterectomy should be performed following the delivery of the baby. This will remove the locus minoris resistentiae and do much to lower mortality.

CONCLUSION.

The mortality of Cesarean section in the United States is much higher than that of other comparable laparotomies. The basic reasons for this mortality are (1) that through no fault of his own the physician has been insufficiently trained in methods of avoiding Cesarean section and (2) that he does not fully realize the consequences of its indiscriminate use.

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DEXTROCARDIA WITH PRESENTATION OF A CASE.*

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Displacement of the heart is necessarily an uncommon occurrence, it may be either congenital or asquired. The asquired may be due to various mediastinal tumors, fibrous condition of the right lung dragging the heart over, fluid in the left pleural sac, pneumothorax, etc.

The congenital, the one we are most concerned with in this paper, is divided into two classes, external and internal.

In the external or what is called ectopia cordis, the heart protrudes through a median fissure in the ventral wall and lies on the surface of the body. This protrusion may take place anywhere from the clavicle to the umbilicus. The heart and its coverings usually also present other anomalous conditions.

Of the internal displacements, by far the most frequent is that of dextrocardia. The heart is transposed to the right side in a mirror position to that which it normally occupies and usually associated with this is a general transposition of all the viscera and a right aortic arch instead of a left. The external form of the heart may occasionally be somewhat changed, the apex slightly bifid but more frequent are the internal changes, more particularly is this true of the septum which divides the right and left heart.

The internal septum may be entirely absent as in fishes; may be fenestrated and incomplete as in some amphibians or the foramen ovale remain patent as in amphibians and reptiles. Associated with this right sided heart are frequent anomalies of the blood vessels.

Case—A. T., schoolboy, age 6, height 42½ inches, weight 34 lbs., presented himself Feb. 18th, 1921.

Family History: Father, well. Mother, rather nervous. One sister, 4 years old, well. One brother, 2 years old, very rachitic.

Previous History: Premature birth, about 7 months, weight 3¼ lbs., nursed the first 4 months, then artificial feeding by day and nursed at night. Weight at one year, 16 lbs., walked at 18 months, spoke a few words at 24 months and used some sentences at 28 months. Has had throat trouble since infancy. Has had two attacks of tonsilitis since he came under my observation.

Childhood Diseases: Whooping cough.

Present Complaint: Under weight, pale and rather a frail child. Takes cold rather easily.

PHYSICAL EXAMINATION.

Sparsely built boy, pale and anemic looking, under weight, skin slightly dry and rough.

Head—normal in shape.

Hair—white, fine and thin.

Nose—obstruction to breathing on both sides.

Mouth—teeth broken, apparently brittle, high palatal arch.

Throat—congested tonsils, slightly enlarged and ragged in appearance.

Neck—a few enlarged cervical lymph glands.

Chest—shows signs of being undernourished and slightly of a rachitic type. Right side more prominent than the left.

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*Read before the Elkhorn Valley Medical Society, Norfolk, July 13, 1921.

Percussion and auscultation, negative.

Heart—apex beat, rather diffuse but most marked 5th interspace, right midclavicular line.

Auscultation—sounds loud and strong at the apex, sounds weak at the lower right border of the sternum. A systolic murmur heard over nearly all of upper part of the chest and over entire area of heart but heard best over what would be normally the aortic area.

Abdomen—liver palpable, spleen questionably palpable, otherwise negative.

Extremities—negative except for peculiar nails.

Reflexes—normal.

Laboratory: Urine, negative. Blood count, reds 3,500,000, haemoglobin, 65 percent. A white cell count was not made. Wassermann reaction, negative.

X-ray: Chest, some increased density about hilum of lungs. Heart—possibly slightly enlarged, pearshaped, that is, the apex is more rounded than normal with rather a broad base. Abdomen—barium meal, stomach on right side, normal in shape and size. Liver shadow on left and large, splenic shadow on the right and slightly enlarged. Barium enema, cecum on the right side, splenic flexure (normally the hepatic flexure) very low below the crest of the ilium, transverse colon passes across the abdomen in a diagonal course with the hepatic flexure (normally splenic flexure) high.

On making the physical examination and finding the heart on the right side, the first question one must decide is whether he has a congenital misplacement or an acquired misplacement due to a fibrous right lung, mediastinal tumor or some other pathological condition in the thoracic cavity. By physical examination, a tympanitic area was found at the lower costal border, right side and a dull area on the left suggesting the presence of the stomach on the right and the liver on the left. Our X-ray findings makes it evident that we have almost a complete transposition of all viscera or the condition known as viscerum transversus.

In this particular case a few points are worthy of discussion. The cardiac murmur and its significance: I confess that I am at a loss to place upon it a satisfactory interpretation. In view of the fact that we have present this anomaly viscerum transversus, I believe we are justified in concluding that other anomalous conditions may also be present. Then, has the undernourishment and general underdevelopment any relation to this anomaly? Personally, I do not believe it has, yet. In the search of literature I find that many of the available reports show a very similar condition. Not much seems to have been written upon this subject and the question of the health and development of the individual as related to viscerum transversus is to me a vague one. In permitting one's mind to reach out on this subject, one might think of various anomalies that are possible, which would not be revealed by physical findings or the X-ray, as for instance, a deficiency of some of the endocrine secretions which would have a very marked effect on growth and development. At any rate, I feel that this case will be a very interesting one to follow and see this boy grow into manhood.

PROLAPSE OF THE UTERUS.*

C. A. Roeder, M. D., F. A. C. S., Omaha, Neb.
(From the Department of Surgery, Nebraska University School of Medicine.)

In presenting to the profession one more operation for prolapse of the uterus, when it is already overwhelmed with various types from the simplest to the most complex, I am aware that I require an excuse far better than any I am able to offer. However, I am becoming more impressed each year with the idea that prolapse of the uterus causing symptoms, is a condition requiring far better surgical consideration than it has received in the past, owing to the fact that only a small percentage of uteri, and also perinei, remain as corrected for one year after the operation. I have become further impressed with the idea that from an anatomical standpoint prolapsus uteri is incurable; i. e., to date we have never had presented a practical operation which would permanently restore the uterus to its previous normal position. The operation of ventral fixation of the fundus and Gilliam's round ligament fixation I am excluding from this paper as they are, respectively, dangerous for future pregnancy and a source of intestinal obstruction. These two methods, however, do keep the fundus up as well as any.

Perhaps the first operative effort toward relieving prolapse of the uterus was through perineorrhaphy by Trotula (1), a midwife attached to the School of Salernum, but no definite surgical effort was made until after the advent of aseptic surgery and general anesthesia. Since then we have had to date over sixty different operative procedures advocated; the number indicating inversely, the value of any one of them. Perineorrhaphy was the first for prolapse, later being added intra-abdominal procedures; two routes we have with us today and characterized by being generally applied just below and above the area where the uterus is supported.

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*Read before the Nebraska State Medical Association, Lincoln, May 11, 1921.

The difficulty of overcoming prolapsus uteri, without performing hysterectomy, is a far greater problem than many of the profession are led to believe. Not enough emphasis has been placed upon the fact that we always have more or less of a general pelvic prolapse accompanying; the uterus being the most conspicuous portion, owing to possessing less individual support as compared with the bladder and rectum. Our ideas of the support of the uterus should be largely influenced by two clinical observations; viz, (1) many women who have born children up to the number of ten or more, with a perineum torn beyond recognition and a levator ani lost in atrophy, do not have prolapse of the uterus; (2) many women who have had only one child, with a good perineal body and well developed levator ani muscles not separated to any extent, do have prolapse of the uterus. This plainly tells us that the perineum and levator ani muscles do not contribute, to any great extent, to the support of the uterus and upper vagina; and furthermore that the uterus is supported, by its attachment to its environment, in the region of the cervix and upper vagina. However, the perineal body, levator ani muscles, utero-sacral and round ligaments are so situated that they can be used, as part of a surgical procedure, to help retain the uterus high enough to prevent symptoms. Their function must be plainly realized if one is to meet with any success in relieving the patient, keeping in mind that an anatomical cure is theoretically impossible owing to the fact that the real supports have been so distorted by childbirth that restoration to normal is impossible. Prolapse in women who have not born children and due to severe intrapelvic strain or spina bifida is so unusual that its practical significane is a negligible factor.

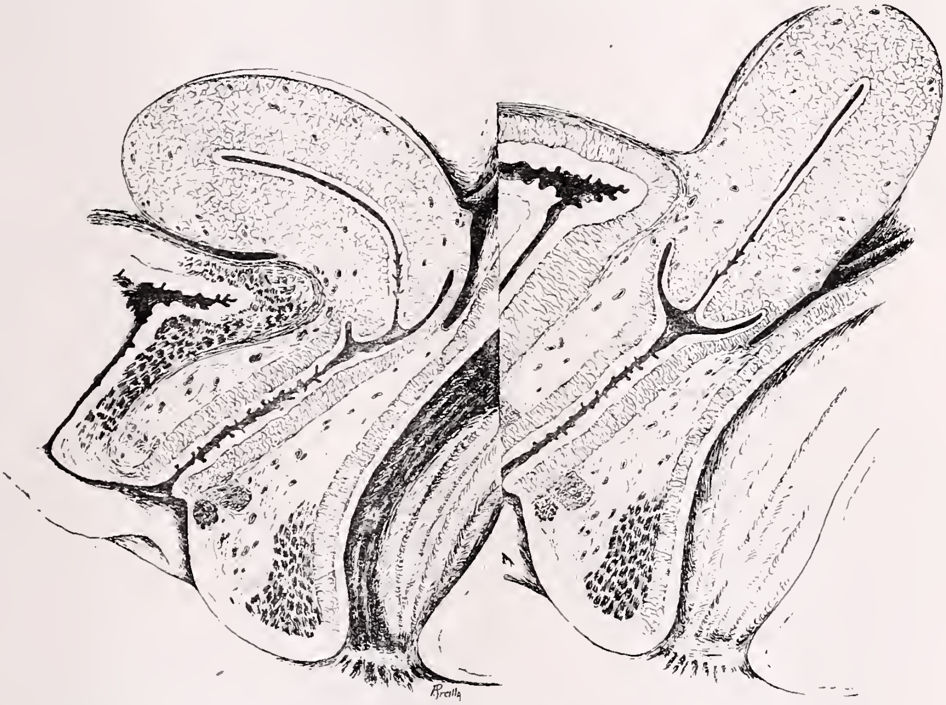

Fig. 1.—Two views of uteri in women who have not born children.

A represents the normal, with the cervix at almost a right angle with the vagina. Note that it is necessary for the posterior vaginal wall to be one-third longer than the anterior.

B represents a very frequent condition in which there is a low retroflexed uterus, due to a congenitally short posterior vaginal wall which is no longer than the anterior. This type occasionally causes symptoms of backache and bladder irritability, but no relief can be obtained surgically without lengthening the posterior vaginal wall by a plastic operation.

Medical students have been taught for over fifty years that the uterus was supported, in the region of the cervix, and not suspended; but never so taught that the supporting structures were thoroughly understood. Evidently our teachers have not thoroughly understood the physiology of support as evidenced by the fact that no two anatomists or investigators agree on the relative importance of the supporting structures. If our anatomical investigators cannot agree, how can surgeons be expected to follow one type of surgical procedure, which contributes in no small degree to the large percentage of operative failures.

ANATOMY.

The uterus and vagina are developed by a fusion of the Mullerian ducts; the fundus from one and the cervix and vagina from another anlage just caudad. Later the cervix and upper vagina receive their morphology; also becoming more or less separated, by a circular layer of mesenchyme, which condenses (Fig. 2) sufficiently around the cervix and upper vagina to lend support to this region; by not only allowing for fascial attachments but for its penetration by vessels, ureters, etc., which taken collectively, form the real diaphragmatic support of the uterus. Occasionally a portion of this constricting mesenchyme develops lower, around the upper portion of the vagina, forming that diaphragm-like fold of vaginal tissue, which not only prevents the formation of fornices but not infrequently interferes with inspection and palpation of the cervix (Fig. 2); it no doubt acts as a contributing support to the upper vagina. The support of the upper vagina is a most important contribution to the support of the cervix and to my knowledge has not been emphasized enough. The position and fixation of each vaginal wall plays a most important role relative to the position of the uterus. A congenitally shortened posterior wall always results in a low lying uterus, and any attempt to elevate it without lengthening the posterior wall of the vagina meets with no success (Fig. 1). This condition with an operative procedure I described in 1910 (2).

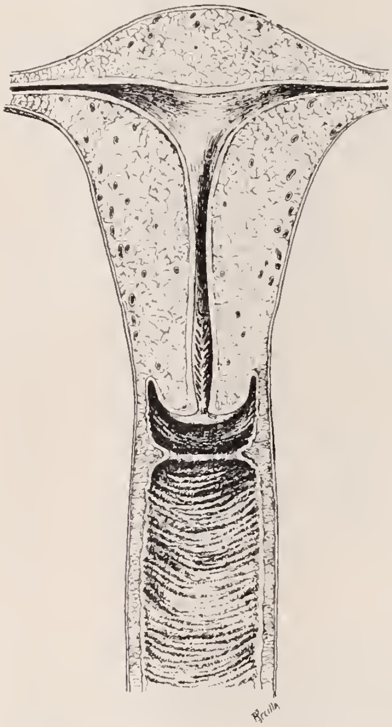

Fig. 2.—Illustrates a circular constriction of vaginal tissue just below the cervix, a relatively frequent condition. It may be due to a deposit of constricting mesenchyme which normally forms around the cervix to give it its form and to differentiate it from the vagina. The cervix and vagina are developed from the same anlage and this constriction may be an embryological displacement. It tends to interfere with inspection and palpation of the cervix.

The uterus is supported by its relative position in the pelvis and not by any one or two structures. It is built into the pelvis like a keystone in an arch, setting more or less on the bladder, vagina and rectum, which organs receive individual support from fascial bands extending inward from the true pelvic brim, enhanced greatly by their positions in contiguity to one another (3). Could we restore all the individual fascial and connective tissue supports to each one of the pelvic organs and vagina, and replace each organ as originally developed, we would have the ideal operation; a procedure beyond even a hope of accomplishment. The position of the fundus, if not adherent, has no clinical significance and no woman should be operated upon simply because the fundus does not point forward. With this idea of the support of the uterus and recognizing that its prolapse is only a part of a general pelvic prolapse, one cannot help but admit that, to date, we have never possessed a physiological procedure for its restitution to normal and I am not endeavoring to present to you an operation which I think meets all these requirements.

OPERATIONS.

Before performing an operation it is most essential to take into consideration the type of individual and the number of previous and future pregnancies desired. The ptotic woman with one child followed by a prolapse will receive little relief from an operation and will have a recurrence, if not before, after every pregnancy. In a woman forty or more who desires no more children, some form of a hystero-fixation, or a removal of the uterus may meet the situation more satisfactorily. There are not a few women who can be given absolute relief by a careful fitting of a pessary, providing a suitable foundation for it to rest upon is present. One must not forget the general effects of pregnancy on all fascia; the chemistry and trauma bring about a relaxation of tissues not only in the pelvis but in the abdominal walls, breasts, neck, face, etc.

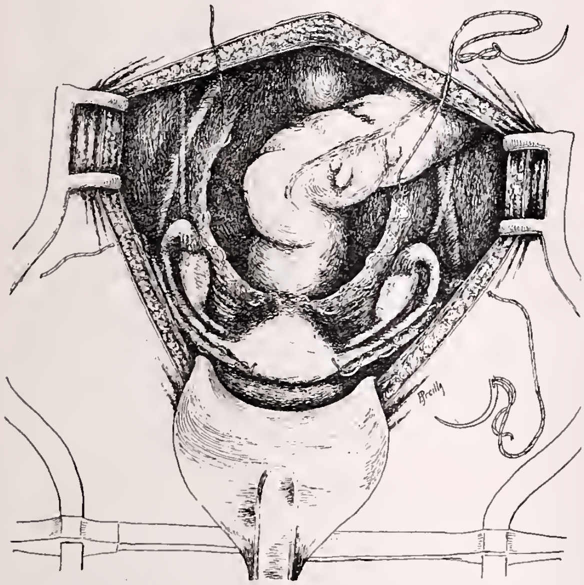

Fig. 3.—Illustrates a fine silk suture passed through the round and utero-sacral ligaments.

The most interesting and instructive articles on uterine prolapse are by Jellett, (4) who advocates shortening the utero-sacral folds around the cervix, thus pulling it up and back into the sacral hollow; Fitzgibbon, (5) of Dublin, who advocates folding the lower broad ligaments around the cervix anteriorly via the vagina; and Long, (6) who increases the diameter and tensile strength of the terminal portion of the round ligaments by shirring them on silk. I am indebted to Long for the idea in originating the operation to be presented.

If the patient is in the child bearing period and the uterus otherwise normal, I have found this procedure quite satisfactory, but not perfect. The fundus is pulled upward through the incision, putting enough tension on the utero-sacral ligaments to make them prominent. The silk suture bites into the fascia covering the sacrum, so called rectal shelf, and passes back and forth through the utero-sacral fold, through the cervix and back and forth through the other utero-sacral fold. Another bite is taken through the sacral fascia and before tying the silk is drawn up like a purse string which shortens the ligaments to about one-half their previous length and triples their consistency so that they are about three times as thick. This elevates the cervix and pulls it back into the sacral hollow. Whenever possible the posterior vaginal wall, (cul-de-sac) is stitched into this newly made ligament. The round ligaments are shirred upon fine silk the same way, passing the suture through the anterior surface of the lower portion of the fundus. The illustrations show the sutures tied at each corner instead of one suture passing straight through as it is recommended. This operation (Fig. 3 and 4) triples the thickness of the round ligament and of course does not support but suspends the uterus. The main point in all operations for prolapse, if the uterus is to be retained, is to produce support instead of suspension whenever possible. The silk is No. 0, very fine and cannot last very long in the tissues, but long enough to allow the ligaments to thicken and for the pelvic floor to contract to render support later on. This operation does not interfere with pregnancy as proven by actual occurrences.

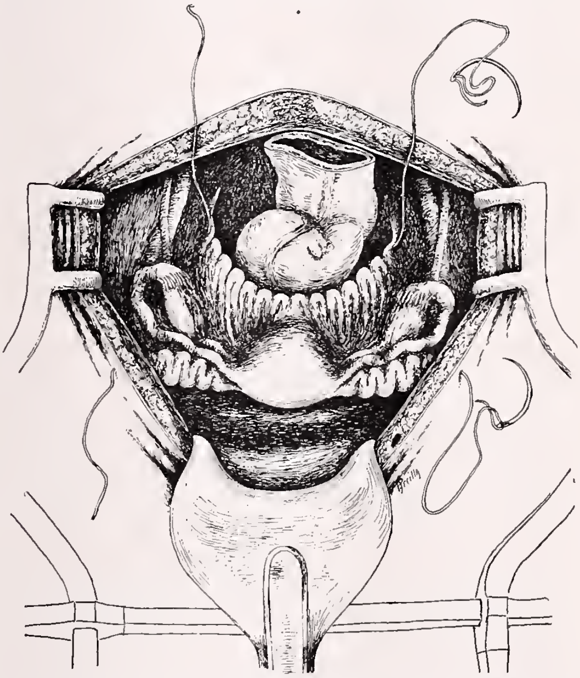

Fig. 4.—Illustrates round and utero-sacral ligaments shirred on the silk sutures as they are drawn taut. The silk in the round ligaments is attached to the external oblique fascia and in the utero-sacral to the fascia covering the sacrum.

SUMMARY.

A prolapsing uterus is the most conspicuous portion of a prolapsing pelvis, which practically always accompanies it. It is supported by its relative position in the pelvis with the bladder, vagina, and rectum, which in turn possess individual support. Therefore there are no one or two things supporting the uterus, it being merely a portion of the lower pelvic boundary and prolapses when the whole pelvic floor gives way. All operative procedures to date are merely methods of relief, an anatomical cure being impossible. It is one example in surgery where one abnormality must be substituted for another, with only a fair percentage of satisfactory results.

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5. The etiology of Uterine Prolapse and Cystocele: Gibbon Fitzgibbon of Dublin, Ireland, S. G. O. July, 1916.

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DISCUSSION.

A. S. von Mansfelde, M. D., Ashland:—I want to add this point: There is not a pessary made, generally speaking, that will fit the case. The doctor should make his own pessary for every case that comes, and then he will succeed in keeping it in position. I am talking of what I absolutely know. It is only a question of ingenuity. In all my experience in gynecology, there is nothing has been so satisfactory to me as recovery in a case of prolapsus of the uterus.

A young girl of eighteen was brought to me by her mother. The girl had a retroverted uterus. She was in a weakly condition. I told the mother I would give her a general tonic. It did no good at all. The mother brought her back, and I said, "I must examine her and find what is to be done." I replaced the uterus. In six months she came back, I opened the door for her. She grinned all over. I did not know her, because she was in the full bloom of health, and nothing did it but her pessary.

At another time an old lady was brought to me with a prolapsed uterus. She could hardly walk half a block at a time and was miserable in every way. She was past the childbearing period. I put in a pessary, and two days after that she went from my house to visit somebody in my service, and she was more tickled than you can imagine, that she could walk three blocks without hurting herself.

These are just two cases showing: the writer of this paper is absolutely correct as to the good, pessaries do if properly placed.

Dr. A. B. Somers, Omaha:—I want to coincide with Dr. von Mansfelde. I happened to be a student fifty years ago, and under that prince, Dr. T. G. Thomas. I think he did more good by pessaries fifty years ago than our surgeons are doing by operations today. I think it is a great mistake—it is tragic—that our modern surgeons have discarded pessaries. The students going out from our schools know nothing about them. They have been depending on surgery. Now, while I am not engaged very extensively in practice, you will be surprised to know the cases I am relieving and curing with the use of the pessary.

There is another point: There are lots of displacements that never produce symptoms. It it does, you must do something for it otherwise not. There is a class that get a displacement after confinement from lack of proper obstetrical care. Posture and attention to proper hygiene, and if necessary, a pessary for six weeks to as many months after confinement, will prevent a very large percentage of those cases of displacement that come after pregnancy. I have such a case in mind right now. She was the wife of a wealthy man in Omaha and had two children, and turned up with a displacement. She consulted a man who said, "Nothing will do you good but an operation." She mentioned a pessary. He said: "Once a pessary, always a pessary."

She went to Chicago to see De Lee. He replaced the uterus, and put one of the largest pessaries into her I ever knew, and told her to go home and become pregnant and come to me with her next baby. I took care of her after in two confinements.

You can cure a lot of these cases after pregnancy by putting the uterus in place, and subsequent pregnancy, and attending to the treatment by posture and giving sufficient attention to proper hygiene.

Dr. F. A. Wells, Axtell:—There is one thing I warn my patients against, and that is the lifting of weights for several weeks or months after confinement. I believe even the lifting of a heavy baby does a great deal of harm. The abdominal muscles force the intestines into the pelvis and force the uterus out of its normal position. Many of us attend confinements in the country and of course in the country homes that are not modern, it is difficult for them not to lift pails, or other weights, but they should always be warmed of the danger of so doing.

Dr. Inez Philbrick, Lincoln:—I want to second what Dr. von Mansfelde and Dr. Somers have said. I speak from a fairly large experience in attending cases of obstetrics. I feel that on the part of the younger members of the profession there is not a proper appreciation of what can be done with a pessary. They miss a good deal by not being able to relieve some cases in this way.

I make my own pessaries, boiling the hard rubber Smith pessary into a circular pessary and using the size that seems to fit the vaginal wall. I have had many patients who have had years of comfort by the use of this form of pessary. It does no harm if it is kept clean with an alkaline douche.

I give my patients the surgical point of view, and most of them have gone and had the various operations performed, but some of them do not care to do this.

I have under my care a University woman who had an operation by one of our best surgeons. Now there is a pelvic hernia that must be repaired later.

Some time ago I had a surgeon who removed a pessary I had placed, and with a mighty oath, flung it across the office. There are cases that will not submit to surgery, and with the circular, smooth, light rubber pessary they can be made very comfortable indefinitely. As Dr. Somers said, every obstetrician should correct the retroversion very early in the puerperal period. If there is an uncomplicated, mechanical retroversion, it should be corrected by a pessary worn for two months, when, as a rúle, the patient is cured. I use the circular pessary for prolapsus and procidentia; the Smith pessary for retroversion.

Dr. C. P. Fall, Beatrice:—I am one of those who has lived through the pessary period, although I am not bragging about my age. I have fitted a good many pessaries. I may be inefficient or unskillful in doing this. I have seen but very few people who were benefitted by the wearing of a pessary. A pessary is a foreign body, and when introduced into the vagina, it cannot help but be an irritant to the nervous system. It does not support very well.

I like the doctor's description of his operation. There seems to me to be one danger: a ureter might be caught up in shirring those round ligaments. I should like to have him explain how much danger he thinks there is in including a ureter in shirring the fascia.

My impression is that a great deal of suffering can be avoided if the perineum is well repaired. He says it does not support the uterus. It takes more skill to repair a perineum after a confinement than to do an appendectomy. If you will hold open the wound, you can frequently pick up the fascia that is torn and draw it together and stitch it. In that way you will restore a great deal of torn fascia that permits the uterus to come down after a considerable laceration of the perineum.

He did not speak of complete prolapsus of the uterus. His operation would not restore a complete prolapsus and do good, in my judgment. The only operation I know that is satisfactory is to draw the uterus out and make an intramural attachment of the uterus into the abdominal wall.

Dr. Czar C. Johnson, Lincoln:—It seems to me if one views the prolapsed uterus as it is, the solution is easy. It is a hernia through the pelvic fascial planes. It is a question of a man's mental make up. If you want to resort to the old fashioned method of treating a hernia of the abdominal wall, with a truss, which is the same as treating a prolapsed uterus with a pessary, all well and good. It is only temporizing. If you want permanent results, there is only one way to achieve them, and that is by surgical measures.

Dr. C. A. Roeder, Closing:—Perhaps there never will be one standard type of operation for prolapse of the uterus. It is a condition operated upon more frequently and with less satisfaction than any other in the pelvis. The young woman of the ptotic type who has had one child and desires more had better be treated without an operation until her child bearing desire is past, when some form of a permanent fixation of the uterus should be done to hold up the pelvic floor.

Relative to the pessary it will give support only where it in turn receives support. I have never found a ureter passing so close to the round ligament that it might be obstructed with this operation. I fully realize however that it has no definite course and should always be kept in mind.

BASAL METABOLISM AND ITS PRACTICAL SIGNIFICANCE.*

M. G. Wohl, M. D. From the Pathological Department of the Methodist Hospital, Omaha.

The activities on which the life of the body depends involve a continuous expenditure of energy and a constant exchange of material. We know, too, when food is taken into the gastrointestinal canal, it is there prepared for absorption and then carried to the tissues either to be directly transformed into energy or to be stored away. The changes that food materials undergo after absorption are included under the general term metabolism.

We speak of chemical metabolism when we consider the chemical changes of food materials as measured by the amount of their end products eliminated. However, when we estimate the amount of heat given off by the body we speak of energy metabolism.

Metabolism is the basis of life and all its concomitant phenomena and regulating it are the glands of internal secretion, among which the thyroid is "the distinguished captain of the team." The determination of the total heat production in the early days of metabolic studies was beset with many technical difficulties; it was necessary to confine the patient in an airtight copper chamber surrounded by zinc and wooden walls with air spaces between, etc., and large enough for a man to live without discomfort; the apparatus being about seven feet long, four feet wide and six and a half feet high. Then one had to collect accurately the various end products that formed from combustion within the body, which factors added to the heat formation. This method of direct calorimetry was expensive and has never found any great practical application.

It is a great satisfaction to note that it is the American School headed by Atwater and Benedict, that has simplified and made practicable the metabolic determinations bringing to a high degree of perfection the respiratory calorimeter as first designed by Rubner. By this apparatus it is possible to estimate not only the carbon dioxide production but also the oxygen consumption. The Benedict unit apparatus is now being widely employed throughout the country, and it is this instrument that we have been using at the Methodist Hospital for the past ten months in our metabolic work. The accuracy of this method has been proven to agree with that of direct calorimetry within 0.01 per cent.

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*Read before the Nebraska State Medical Association, Lincoln, May 9-12, 1921.

To repeat, then, in order to determine the total energy expenditure of the body in units of heat (calories) we estimate the oxygen absorption and carbon dioxide elimination, or in other words we determine the respiratory quotient. It is surprising how little attention the clinician has given to the study of the respiratory exchange in disease. From the respiratory quotient one can readily tell whether the losses or gains are actual or masked by retention of large amounts of water in the body, instead of a loss or gain in musculature, etc.

To illustrate: From the chemical composition of foods we know the exact amount of oxygen it takes to burn one gram of a substance and the amount of carbon dioxide produced. Thus the ratio for carbohydrates is 1, for fats is .71 and for proteins .77. Now having determined the amount of oxygen our patient consumes, and the amount of carbon dioxide he excretes, we can readily estimate how much of his total heat production is due to a burning of carbohydrates, fats or proteins. It is evident, then, that the total metabolism of an individual varies with the kind of food taken, and muscular activity. For comparative purposes it becomes necessary then to adopt conditions under which these factors are reduced to a minimum, that is when the body is at complete rest, and when the digestive processes are at their normal daily minimum. The rate of heat obtained under these conditions we designate as "Basal Metabolism."

Method of Procedure: It has been our rule to make the test after a twelve to fourteen-hour fast, that is, the morning before breakfast, no food having been taken since the meal of the previous evening. Hospital patients are brought to the laboratory on a cart and required to rest fifteen to twenty minutes before the test is begun. Patients from outside are subjected to one-half to three-quarters of an hour's rest before the test is begun. Nose and mouth pieces are applied and patients instructed to breathe as naturally as possible. An average of at least a seven-minute period, repeated twice, is preferable. In nervous and neurasthenic patients we found it necessary to repeat the test on two consecutive days. It has been our experience that in such instances the rate obtained the second time may be from ten to fifteen points lower; however we have never seen variation to be so high as to totally discredit the first reading.

The calculation of the basal metabolic rate from the data obtained is very simple. Knowing the amount of oxygen the patient consumed a minute (since the heat produced when one liter of oxygen is absorbed in the body remains relatively constant, irrespective of whether oxygen is used to burn fat, carbohydrate or protein, the oxygen consumption is a more important and better index of the total heat production, an average normal respiratory quotient of 0.82 is assumed) the calorific value of one liter of oxygen being 4.83, we can readily calculate the heat produced in an hour (correction being made for variation of temperature and barometric pressure). The number of calories must be divided by the surface area, a factor dependent upon height and weight of the individual. The number of calories each hour per square meter of surface of body is compared with numerals of the same age and sex. For convenience the basal rate is expressed in percentages of the normal and when the heat production is greater than the normal the percentage is plus, and when less than normal, the percentage is minus.

To eliminate possible errors in technique and calculations, we have made thirty-seven observations on twenty-five normal, healthy individuals and persons suffering with minor diseases unassociated with disturbances of internal secretions. In six individuals repeated observations were made to determine the variation occurring in the same individual. We found that the average variation in the same individual was less than five per cent (4.6). The average variation of the normal metabolism in different individuals was—the highest plus nine, and the lowest minus seven. It is then evident that the basal metabolism of an individual, like pulse, temperature and blood pressure, varies little from day to day and month to month, provided the weight remains the same.

At the present time we have made one hundred and ten observations of basal metabolism on seventy-six patients. Our cases studied have been those in whom a chronic metabolic disturbance could possibly account for the production of symptoms. The greatest variation from the normal occurred in individuals in whom an endocrine disturbance could be determined or considered as a possibility. The glands of internal secretion furnish a series of substances called autacoids; these enter the blood stream and act on certain body cells either speeding them up or depressing their function. An alteration in the formation of autacoids will produce definite pathological conditions with a corresponding alteration in the basal metabolism. Conditions like myxedema, exophthalmic goitre, etc., can therefore be explained by alterations in the quantity or character of secretion produced by an endocrine organ.

The only other factors possibly influencing basal metabolism besides autacoids are the toxins in fevers. This explains the value of high grade caloric diet in typhoid as advocated by Coleman and DuBois.

HYPERTHYROIDISM.

The symptoms of overactivity of the thyroid gland are many. Besides the well known features, such as tachycardia, nervousness, loss of weight, and a tendency to increased sweating, there is always a rise in the general heat production, or basal metabolism. It is in line with the experience of most men that a rise in basal metabolism is not only a constant feature, but is the most striking and characteristic manifestation of thyroid overactivity. In our series, comprising thirty seven cases, all typical clinically of hyperthyroidism, the basal metabolism varied from plus thirty two to plus eighty eight; the patient's condition corresponded to the numerical expression of the basal rate; i.e., the more severe the intoxication the higher the basal rate.

Two cases are of particular interest:

Case No. 22—Mrs. S., patient of Drs. Bridges and Jonas. Present History: Three months ago insomnia, loss of flesh; had a right thyroidectomy seven years ago. Ever since has been dyspneic. At present time patient complains of shortness of breath, loss of weight (lost thirty five pounds in three months), palpitation, weakness, headache in the frontal region. On physical examination her eyes typically exophthalmic; teeth good, tonsils normal; neck, no glandular enlargement, scar from previous Kocher incision. Thyroid, both lobes enlarged and more so on swallowing. Heart normal. Pulsation of vessels of neck prominent. Abdomen negative. Blood pressure—systolic 120, diastolic 65. On Sept. 25th basal metabolism was plus eighty three. Patient placed on medical treatment and rest in bed. On Nov. 6th the rate was plus eighty six. Patient operated on by Dr. Jonas (left lobectomy) on Nov. 10th. On Nov. 24th the rate fell to plus seventy. Clinically patient improved and was dismissed from the hospital.

Case No. 77—Mrs. L., patient of Dr. Tyler. Age, fifty six years. Present complaint: Patient extremely nervous, fatigues easily, has palpitation, has lost eight pounds in weight within the last year. Physical examination, skin moist, tonsils small and infected, anterior pillars deeply injected. Right lobe of thyroid enlarged one plus. Left lobe enlarged two plus, pulsates. Eyes, exophthalmos one plus. Fine tremor of hands, heart systolic murmur, loudest at the aortic area. Heart pounds. Pulse 124. Blood pressure, systolic 130. The basal metabolism on Oct. 8, 1920, was plus eighty three. Patient's tonsils and a couple of infected teeth were removed, and X-ray treatment given. On December 9th her metabolic rate was plus seventy. At this time patient was suffering from an acute attack of bronchitis, and her general condition was not very good. Patient placed in bed, and upon recovery from the acute respiratory infection, another course of X-ray was given. On March 15th her metabolism was plus sixty, and clinically the patient showed marked improvement.

We are at present following up the metabolism of a series of cases of exophthalmic goitre that are being treated with the X-ray and shall report our observations in the future. However, these cases are cited first, to bring out the point that the toxicity as judged clinically runs very nearly parallel with the rise in metabolism, and second, to emphasize the important guide we have at present in checking the results of treating exophthalmic goitre either by medical, surgical or X-ray means.

It would be a great step in advance if we could determine by metabolic studies which class of cases run the risk of surgical interference, and in what group of cases the Roentgen ray treatment is the method of choice.

Since the basal metabolic rate has been found to be normal in cases of psychoneurosis, it has proved of great value in the differential diagnosis of neurosis simulating hyperthyroidism and true hyperthyroidism as illustrated in the following case:

Case No. 45.—Mr. G., patient of Dr. Bliss, age 22, student. Had diphtheria at 10, mumps at 13. Had influenza two years ago, after which he developed shortness of breath and palpitation. Present complaint: Took sick last June and complained of shortness of breath and discomfort in chest. Hands sweat easily; has fainted on exercise or excitement. Lost weight lately. Physical examination revealed the following: Hands of vasomotor type. Patient takes a deep breath every now and then, saying that he is forced to do so because of a sensation in cardiac region. Heart normal. Eyes react to light and accommodation. Teeth good. Thyroid not enlarged. Nose and throat: Anterior pillars somewhat congested. Tonsils look normal. Expressed thick matter from crypts. Frontal sinuses clear upon transillumination. Chest well formed, lungs normal. Heart normal in size, sounds good, no murmurs. Occasional sinus irregularity. Abdomen negative. Skin normal. Reflexes normal. Pulse 80. Blood pressure, systolic 120, diastolic 80. Laboratory findings: Wassermann reaction negative, blood count and urinalysis practically normal. Differential diagnosis rested between neurocirculatory asthenia and endocrine disturbance. The basal metabolism was normal, plus eight per cent. In this case there were several important symptoms of thyrotoxicosis, namely, a definite fine tremor, general debility, loss of weight, throbbing and easy perspiration, indicative of vasomotor disturbance. The thyroid intoxication was ruled out by the normal metabolic rate. Patient's tonsils were removed. His present condition much improved. The final diagnosis: Functional heart — neurocirculatory asthenia.

HYPOTHYROIDISM.

A diminished metabolic rate is a constant feature of myxedema, and to a lesser degree of hypopituitarism. There is a large group of cases without edema whose chief complaint is that of asthenia, "the physical and psychic adynamia", arterial hypotension, changes in the skin, and even marked myopathies, that are due to diminished endocrine function. These cases, grouped by Plummer under the term "secondary hypothyroidism", improve clinically under thyroid therapy. Our series comprises seven cases of this type, three of whom have been under thyroid therapy. Their metabolic rate was markedly raised, and clinically their symptoms were greatly improved. The following case will serve as an interesting illustration of the above:

Case No. 70.—Mrs. R., patient of Dr. Wilder of the Mayo Clinic and Dr. Bliss. Patient 60 years of age. Her chief complaints: Sour stomach, sensation of lump in throat, especially after exercise. Attacks of difficult breathing, not always associated with exercise. General weakness and prostration and lack of ability to do. Feeling of weight on chest. Consciousness of extreme throbbing of the vessels of the neck, most marked on the right side. Extreme nervousness and insomnia. Upon physical examination patient presents a marked wrinkling of the skin, which is thick and dry. Looks anemic. Hair sparse and dry, not especially coarse. Eyes negative. Teeth, no abscesses. Tonsils submerged and expressed thick secretion from both tonsils. Sinuses clear under transillumination. Marked pulsation of vessels of the neck. Thyroid, right lobe palpable, pulsating. Lungs, negative. Heart, negative. Blood pressure, 184 systolic, 92 diastolic. Other findings negative. Her basal metabolism estimated at the Mayo Clinic, was persistently low, and as Dr. Wilder stated, no other pathology whatever was found to account for her symptoms. Patient was placed under 1¾ grain of thyrotoxin, which she had been taking every other day for a period of two weeks. Her basal metabolism at this time, estimated by us at the Methodist Hospital, was plus three and plus seven on different occasions. Patient's tonsils were removed. Patient showed a marked tendency to hemorrhage, and was very slow in recovery. No thyrotoxin was used while her throat was acutely sore. On the day patient left hospital her metabolism was minus thirteen, her symptoms likewise not being improved, and if anything somewhat worse.

In one of our cases of Addison's disease, following nephrectomy, there was a metabolic rate of minus thirty and minus twenty. After repeated administration of adrenalin the metabolic rate has risen to plus twenty seven, and the asthenia greatly improved. The effect of subcutaneous injections of adrenalin chloride has been studied by Sandiford, Tompkins, Sturgis and Wearne. They have demonstrated a marked increase of the rate of cellular combustion amounting to an increase of fifteen to forty eight per cent. The modus operandi of epinephrin on the rise of basal metabolism is not definitely understood. However, it is attributed to the effect of adrenalin on the sympathetic nervous system. The same is true of pituitary, parathyroid and pancreatic secretions. A careful scrutiny of the facts known convinces one of the great need of intensive study, both clinical and laboratory, of the entire endocrine system.

PREGNANCY.

As far as we are aware it has not been allotted any consideration in the studies of basal metabolism. To determine the influence pregnancy has upon metabolism we have undertaken a special investigation, and although our study is not complete as yet, it is interesting to note that in nine cases studied the basal metabolism ranged between plus five and plus sixty three, the highest figures being obtained in the first three and last two months of pregnancy.

CONCLUSIONS.

1. Basal metabolism is constant for the individual and in different persons is proportional to the surface area of the body.

2. The determination of the metabolic

rate has passed the experimental stage and should find a place in the clinician's armamentarium by the side of X-ray, serology, blood chemistry, etc.

3. In all cases with symptoms resembling thyrotoxicosis, either with or without a definite thyroid enlargement, the basal metabolism determination is indicated in order to ascertain the degree, if any, of toxicity.

4. For practical purposes, an increased basal metabolism rate indicates hyperthyroidism, either from exophthalmic goitre, or thyroid adenoma.

5. The basal metabolism rate furnishes an accurate index to the success of therapeutic agents, medical, X-ray and surgical, in thyroid disease.

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DISCUSSION.

Dr. H. J. Lehnhoff, Lincoln.—It is my opinion a great many of us are inclined to shy at this kind of a paper. We do not like to get mixed up too strongly with papers that go very deeply into chemistry and physiological chemistry. I feel very grateful to have a paper of this kind brought up, and surely think we owe a great deal to the doctor for presenting it so well.

If I may repeat what he said in his first sentence, and at the same time remind you of some of our earlier physiology that we might have forgotten, I want to begin by saying we take food into the mouth, and from the time that food is taken into the mouth until the products of the food get into the blood, we call the process digestion. Now, this process is practically entirely a hydrolyzation process. It is practically the addition of water under the influence of enzymes. For instance, the changing of starch after it has been acted upon is largely a hydrolyzation process. So it is in the action of the stomach and by the juices from the pancreas. That is almost as true of the proteids and fats. So the entire process of digestion is practically a process of hydrolyzation.

The process that occurs from the time the food leaves the mouth until its products are in the blood where they are converted into energy, or new tissue, or eliminated, is an oxidation process, and that process is called the process of metabolism.

In measuring the metabolism by the methods Dr. Wohl has mentioned — by the so-called close methods — not by the methods of production of heat — we measure that amount of oxidation. That is very simple.

Digestion is a matter of hydrolyzation until we get the food products in the blood. From that time on it is a process of oxidation, and we measure the amount of oxygen that is consumed in the process, and likewise the carbon dioxide that is eliminated.

In the process of metabolism, it is not entirely a process of oxidation. The carbohydrates absolutely fall into that. The metabolism of fats — for instance, the changing of the fatty acids in glycerol from the blood to their final products — is not entirely a process of oxidation; and the processes other than oxidation are so small they are practically eliminated.

Now, the basal metabolism is really the metabolism that occurs when the least energy is expended, and when there is no particular excess of food to be taken care of. It is the minimum metabolism.

Now how do we profit from a diagnostic standpoint, by getting these metabolic rate readings, or by knowing the amount of oxidation that is going on in these different environs?

We must remember that basal metabolism is merely the record of another symptom. It is only one factor. In itself, from a diagnostic standpoint, it does not prove everything in regard to your patient. The higher or lower rate of metabolism in a certain individual is placed on a plane parallel with other symptoms — for instance, loss of weight, or temperature. In itself, it does not prove the whole thing.

Now there are a number of diseases in which the metabolic rate is changed. We are very much inclined to associate changes in the rate with hyperthyroidism. But there are other diseases in which it occurs. Dr. Wohl mentioned some of them. I think we meet this difficulty in the diagnosis of early hyperthyroidism.

Dr. G. W. Covey, Lincoln.—This has been a very instructive paper, and yet the doctor has simplified it sufficiently so that it is easy for us to understand.

We have been doing basal metabolism examinations by the same method Dr. Wohl mentioned for about eight months. We find that it is in hyperthyroidism we get the most benefit from the determination of the basal metabolic rate. As the doctor said, the thyroid gland seems to be the chief gland in this respect.

The point of determining the operative risk is one that requires considerable thought. I like to think of it this way: that in the event we have a case in which there is a question about the operative risk, it is certainly better if we can get the rate down before the case is operated upon. Of all the tests we have had in hyperthyroidism for determinig the degree, this is certainly the best one and of the greatest help. It must be used in conjunction with careful clinical observation and with any other tests we may have at hand. In using it to determine the operative risk, we must remember in the first cycle it is certainly of more value than in the following cycles. In the first cycle there is usually a certain amount of damage done, chiefly to the heart muscle. In the later cycles, the clinical symptoms are going to be very much greater in comparison to the metabolic rate, and it cannot be used in those cases with as much dependence as in dealing with the first cycle of the disease.

In a diagnostic way, it is of greatest aid in those cases in which there is a little question as to whether you are dealing with hyperthyroidism, a neurosis, or early endocarditis, or an early case of tuberculosis. In early cases there are many symptoms similar and it is difficult to determine which one you are dealing with. The determination of the metabolic rate will either definitely rule out or in hyperthyroidism. In these cases it is of great value to us.

Dr. A. L. Smith, Lincoln.—I want to congratulate Dr. Wohl in bringing this subject before us, for we are prone to drift away from the scientific side of medicine.

I believe, however, we must emphasize the complete examination of the patient, as one test or examination of one part of the body is absolutely valueless. For example, hyperthyroidism is not the only thing that gives an increase in the basal metabolism rate. In my perusal of all the literature no man has made such a claim. Dr. Wohl's idea of the mechanism of thyroid disturbance is too definite in the light of our present knowledge of this condition. A lot of theories have been advanced but we have no definite knowledge as to the interrelation between the glands of the endocrine system.

There are many diseases in which we have an increase in the basal rate. For example, I had one patient with diabetes, who when she developed acidosis had a rate of eighty two plus. It is increased in nephritis, in fevers, pregnancy, during menstruation, neurasthenia, neurocirculatory asthenia, tumors of the hypophysis as well as in hypersecretion of the thyroid gland.

The basal metabolism rate, in itself, is absolutely worthless. I do not mean by this that it should be condemned, as we do this test on each patient having any nervous symptoms. In conjunction with a complete examination, it is a great factor in arriving at the proper diagnosis, especially in borderline dysthyroid conditions.

The basal rate can be compared to an increase in white blood cells in an infection, or to hemoglobin estimation in an anemia, but like these, it does not tell us what is the cause of the abnormality.

Where there is an increase in the basal metabolism rate, we must find a cause and this method alone without a complete examination will not show what the etiological factor is. One of its real values is in the early diagnosis of hyperthyroidism. This condition can then be treated properly and completely eliminated, but later on, the damage to the other organs has taken place and no treatment whether medical or surgical can restore them to normal.

It is also of value during treatment of hyperthyroidism, telling us at all times the exact amount of toxicity present. Finally, in my opinion, its value rests upon showing the amount of toxicity, the progress of our treatment, and gives us one more method of making an early diagnosis in abnormal function of the thyroid gland.

Dr. Wohl—Closing: I wish to thank the gentlemen for their very interesting discussion. I fully agree with Drs. Lehnhoff and Covey that basal metabolism determination is important when taken into consideration with the clinical picture of the case. For after all, there are mighty few biologic tests that are pathognomonic of any clinical condition when taken alone. Basal metabolism is another factor that when properly interpreted will prove of great value in the diagnosis and therapy of obscure thyroid disease, hypo- or hyperthyroidism.

I beg to differ with Dr. Smith about getting high metabolic readings in a great variety of conditions. It is true that in fever accompanied by burning up of tissues, the metabolism is apt to be higher than normal, yet if you take the patient's temperature before the test, fever as a disturbing factor could be very readily ascertained and the final reading properly interpreted.

There is no greater need today than an intensive clinical and laboratory investigation of the endocrine system,—the thyroid, pituitary, adrenal, ovary, etc., and any attempt in this direction should be encouraged.

Permit me, in conclusion to emphasize that for practical purposes a high metabolic rate, when fever is eliminated, points to a thyroid intoxication. With the other clinical findings leading in the same direction, the diagnosis is clinched and proper treatment instituted. The same applies to very low metabolic readings, suggesting hypothyroidism, and calling for thyroid administration.

STANDARDIZATION OF NEBRASKA HOSPITALS.*

Frank Conlin, M. D., Omaha, Neb.

The chairmen of the Medical and Surgical Sections of our Association are expected to address you upon a subject not scientific, but more upon the line of a general topic with particular regard to policy. With that idea in view I have chosen for my title

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*Address of the Chairman, Medical Section, read before the Nebraska State Medical Association, Lincoln, May 10, 1921.

"Standardization of Nebraska Hospitals."

We hear much these days about health centers, prenatal care, child hygiene, physical education in the schools, diagnostic groups, fee splitting, and standardization, all activities having for their object the health of the individual or the community. In analyzing the forces behind these movements, we find that in many instances they have been initiated and directed by others than the medical profession. That, in other words, the public is beginning to look into things medical and is demanding a higher degree of service from the physician.

As you all know, there is a great movement on foot throughout the country toward compulsory health insurance. This is class legislation, and, as is usually the case, works injustice to some other class than the one it is intended to help. The chief sacrifice both from the standpoint of service and remuneration in this instance falls upon the medical profession. It is intended to benefit the working classes, many of whom earn as much or more in wages than the average annual income of the private practitioner (Billings).

The legal profession might be said today to be subsidized either by state, corporations, or labor. The interpretation of the law by the judges must reflect popular opinion to a greater or a less degree.

The educational profession is on a salary which depends upon political appointees who regulate that salary by the amount of taxes obtainable from an already greatly overtaxed population.

The ministerial profession exists on a totally inadequate remuneration.

Among the professions requiring exceptional character and training the medical profession alone has stood the test of the years. Commercialism on the one hand and socialism on the other are threatening that independence. One way to protect our profession from the inroads of these influences is to improve our standards in every way possible, to cooperate, to banish commercialism from our ranks, and to refuse to compromise with outside organizations. (Northwestern Med. Journal May 1920).

History teaches that, when, in the complexities of modern life, radical reforms assume such a force as to result in insistent demands for unusual and excessive privileges it is easier to anticipate and circumvent them, than to overthrow them in open conflict. History also teaches that greed and violence are usually the result of previous injustice or neglect. If everything is not done for the health of the community according to the means and the ability we possess we may be sure that sooner or later a wave of protest will sweep over the nation and we physicians along with the other members of the educated class will have to pay an excessive price for previous indifference (Brastead).

To persist in our inefficient methods of private medicine is to discount much of importance in the great advance medical science has already made. To deny the public the full benefit of these advances invites destructive legislation which may ruin the profession here as it has in Germany and is now ruining it in England.

The only opponent the unscrupulous politician ever alert for a form that may add to his political power can have is an organized medical profession and a profession which has seen the light sufficiently early to get its house in order.

Medical practice of the past has been largely that of individual endeavor without consideration of community needs. A solution of the problem of how best to serve the public, while still serving our own interests, has only recently been considered. There is no question that the practice of medicine, whether limited to a specialty or not has long ceased to be a one man job. A large majority of patients consulting a physician undoubtedly do present minor or obvious complaints. There is, however, a large group whose complaints are obscure who require not only intelligent direction but also a variable amount of special diagnostic work, all the facts sufficiently correlated and brought together in order to establish a diagnosis. As Cabot has said, there are two classes of people who up to the present time are well diagnosed and well treated. The very poor in the charitable clinics, dispensaries, and hospitals; and the very rich because they have means to go from one specialist to another without, however, having that calm, sane judgment of the old family physician to advise them in their search for a diagnosis and their acceptance of a treatment.

The great mass of people between these two extremes demand this same service and deserve it. Several solutions of the problem have been offered. Some have suggested diagnostic clinics, others group practice, others health centers, and so forth, but, to my mind we would be a long way toward a solution if we would take advantage of the opportunities already offered us to do this special work in the forty-four hospitals we have in the state of Nebraska.

Hospitals today stand in a much closer relationship to all classes of people than at any previous time. The sick public, rich and poor alike, is demanding more and more to be sent to hospitals for treatment. Physicians are sending their patients with greater and greater frequency to the better equipped institutions for study and observation. The larger proportion of children are being born in obstetrical wards and surgical work is seldom done outside of a hospital (Sweetzer).

Unassisted, a doctor is no longer able to practice properly his profession. He must have the help of the pathologist, the roentgenologist, the chemist, in order to help him make a diagnosis, in many instances. However, I might add at this time that I realize fully how prone some of us in the profession have been to depend too much upon laboratory and X-ray examination and not enough upon our judgment plus that indefinable, intangible something known as common sense.

Ordinarily when we think of a hospital our idea is of a place where a sick person may go and obtain such treatment as may restore him to health. It presupposes all of the special aids in the way of equipment, personnel, skill and knowledge to make a correct diagnosis and follow out a complete line of treatment. A patient has the right to ask of the hospital if they are prepared to give him that kind of service. Do the hospitals of the State of Nebraska measure up to that standard? I regret to say that various surveys made by independent bodies have shown that to a large extent they do not. Although for a long time there has been no question about there being a great need for improvement in the efficiency of these hospitals, until the last few years no movement has been made to improve them. The hospital should guarantee to its patient the very best medical, surgical and diagnostic skill available. The majority of the hospitals of this state give no such guaranty to the patients coming under their care. Money deposited in any bank in this state is guaranteed by the state that the money will be taken care of and returned but there is no such guaranty given to a stranger going to a hospital or into the hands of an unknown medical man.

We have a sufficient number of hospitals in the state to provide one bed for each 369 of the population and I believe that were they organized, standardized and adequately equipped for diagnosis and treatment and could thus guarantee to every patient coming to their doors one hundred per cent service we would be a long way toward nullifying the efforts being made towards socialistic or state medicine.

Through the work of the American Medical Association in weeding out the poorer medical colleges and improving the standards of the really good schools there is no doubt that the standard of medical graduates today is higher than a decade ago, but not until the American College of Surgeons advocated their minimum standard was any real progress made in improving our hospitals. The American College of Surgeons demands first, that in order for a hospital to come up to its minimum standard it must have an organized staff, whether that staff be an open staff or a closed staff is left to the individual hospital to decide. The staff must function as a staff. It demands that although the men need not necessarily be specialists in their particular line they should have special training along special lines. It demands that this hospital staff meet regularly and this staff consider the work being done in the hospital. It demands that the surgical staff make preoperative diagnosis in writing; that the medical staff have a working diagnosis when the patient has been in the hospital twenty-four hours. They demand that the patient's interest be paramount and the staff work together with that idea in mind. They demand an adequate system of records and that these records be true, that they be scientific and that they be accurate, they demand that analyses of the work done in the hospital be made at the end of each month, so that blame may be placed for infection, for deaths, for poor work, etc., where the blame is due. They demand an adequately equipped and properly functioning laboratory.

The American Medical Association has only classified hospitals with the idea of selecting those for the satisfactory training of internes. Inasmuch as an interne does not care to take his training in any but a large hospital the work done by the American Medical Association has not covered the small hospitals. It is just as essential that the small hospital be improved as it is for the large. The A. M. A. considers only five hospitals in the state as of a standard high enough to satisfactorily train internes. According to the American College of Surgeons which has only classified hospitals of over one hundred beds five in the State of Nebraska come up to this standard although ten of our hospitals have a hundred bed or over capacity.

Hospitals that are improved, that are standardized, give an excellent degree of service to the patient. They serve to stimulate and improve the medical profession, to the end that the profession may serve the patient better; they act as a postgraduate school for the men just out of college and for the interne, and they act as a health educational center for every patient coming within their doors. With forty-four hospitals in the state of Nebraska all working along definite standard lines the profession and the public would both profit, for in improving the hospitals we are not standardizing the hospitals so much as we are standardizing the medical and surgical staff of that hospital. In other words, we are improving the whole profession.

The problem I am bringing before you today is not a new one. Welch in a paper read before this Association in May 1919, Roeder in an article in the Journal, March 1919, and Christie in an article in the Journal, August 1919, all dealt with the same subject.

I should like to see the State Association give its hospital committee the power and work to have that power backed by the State Legislature to enforce higher standards of medical and surgical efficiency in the hospitals of this state. In other words, to require that these hospitals come up as close as they possibly can to the standards I have outlined. We would have forty-four health centers, forty-four educational centers, and forty-four post graduate medical schools. It would not be long before the public would become conscious of the fact and the pitiless publicity given to hospitals not coming up to the standard would be sufficient pressure to make them do so.

A CIVILIAN SURGEON'S STORY OF THE GREAT WAR.

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Nebraska. Formerly Lt. Col., M. C., U. S. Army.

CHAPTER VIII.

Following the Armistice some of the medical officers relieved from duty with Divisions at the front returned to Savenay where they became ward surgeons. In this and other ways they assisted us with the large amount of work we then had in our area.

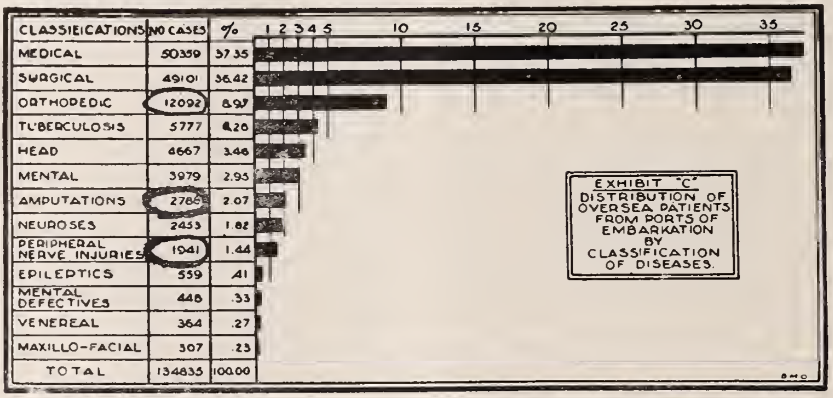
Colonel Goldthwait made two visits to the Hospital Center in November, and gave lectures to the Orthopedic Staff along general and special orthopedic lines. The Orthopedic Staff at that time at the Savenay Hospital Center consisted of seventy-two surgeons. A number of staff meetings were held. One group consisting of medical officers, nurses, and reconstruction aides, was transferred to Brest, and equipment sent along for the organization of an Orthopedic Service at that place. Captain Cole of St. Paul, Major Graves now of Rochester, New York, and Major Hartman of Findley, Ohio, who were successively in charge of this service at Brest, all came to Savenay during November or December and made a study of our work.

We in turn were ordered to Paris on several occasions to attend the Red Cross Hospital Conferences, and to see the work of the Base hospitals in that area. It was upon one of these visits that I had the privilege of seeing the work of Professor Chutro. He had worked out a unique organization and an operating room and dressing technique. His service was the only absolute surgical monarchy I have ever seen. But he was doing fine surgical work and securing some excellent results.

On the whole this was a rather difficult time. The hospital was crowded with patients, many of them in serious condition. Base hospitals at Mesves, Mars, Allerey, Orleans and even some of the Paris hospitals were being entirely evacuated. In some instances at least, wounded men were being transferred to us in more serious condition than at any previous time. Consequently we saw at Savenay some very serious deformities, some very severe injuries, and a number of patients who required major surgical procedures before they could be fitted for transfer to the United States. It was among these patients that we had to break up a considerable number of malunited femurs and other serious malpositions for improvement in length and position before the patients could be sent home.

After the Armistice, the medical staff suffered to some extent in the same way as the combat forces. There was a decided let-down in the general morale. A large number of the officers and men were extremely anxious to get home. In spite of the very considerable hospital problems still remaining, the feeling was prevalent that the war was over.

To add to our other difficulties we had a great deal of rain in our part of France. It was said that from October to January, there was rain at Savenay during part or all of every day for seventy days.



CLASSIFICATIONS	NO CASES	%
MEDICAL	50359	37.35
SURGICAL	49101	36.42
ORTHOPEDIC	12092	8.97
TUBERCULOSIS	5777	4.28
HEAD	4667	3.46
MENTAL	3979	2.95
AMPUTATIONS	2786	2.07
NEUROSES	2453	1.82
PERIPHERAL NERVE INJURIES	1941	1.44
EPILEPTICS	559	.41
MENTAL DEFECTIVES	448	.33
VENEREAL	364	.27
MAXILLO-FACIAL	307	.23
TOTAL	134835	100.00

Taken from the report of the Surgeon General, United States Army, 1919.

During November and December there was, however, a steady stream of patients as well as troops toward the United States. The policy was established of sending home one medical officer with every one hundred and fifty patients. In this way a number of those who had been prominent in the work, came through Savenay on the way to the United States.

Major Ralph R. Fitch of Rochester, New York, came through Savenay on December 20th, having finished four years of continuous war service with the French and the Americans. He and Mrs. Fitch in their own hospital at Etaples had done a great deal of fine work for almost the entire period of the war.

In January it was my privilege to meet in conference with Colonel Nathaniel Allison of St. Louis, and Major DeForest Willard, of Philadelphia, at Angers. There was a question as to what disposition to make of the remaining American wounded in France. It had at first appeared that the more seriously wounded might have to remain in France for many months. Colonel Goldthwait had under consideration a plan for semi-permanent Orthopedic Centers, with staffs and equipment for a prolonged period of reconstruction treatment.

After reviewing the situation, however, at headquarters, it was decided to send the patients home, even the seriously wounded, as rapidly as possible. Consequently the preparation of the balance of the American wounded for transportation to the United States fell upon our well organized staff at Savenay. This work began to lighten considerably toward the end of January and became still lighter in February.

Major Francisco of Kansas City, arrived on February 9th to take over my duties as Consultant in Orthopedic Surgery in this area.

I remained at Savenay for a few days longer in order to comply with the request of Colonel Cooper for a written review of our work at Savenay*. This was finished and I was sent to Brest about February 19th in charge of a detachment of convalescent patients. At Brest I had the common experience of being delayed a few days for a suitable boat for our patients. On the night of February 24th, we embarked for the United States, with about three thousand convalescent patients.

The return from France was far from the restful voyage I had hoped to have. I was assigned immediately in charge of a compartment containing over eight hundred convalescent sick and wounded. The first four days out were very stormy and many patients and officers were seasick. However, we reached New York without serious difficulties of any kind. Thanks to a splendid captain and a highly efficient troop commander, we made the journey in eight days and delivered our convalescent detachments at Hoboken without the loss of a man.

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*This will be printed as an appendix to this story when published in book form.

I returned to the United States to find new surprises in store for us. We should have been accustomed by this time to surprises of almost any kind in the military service. The changed atmosphere in the military hospitals in the United States and the different attitude of medical and surgical services toward the American wounded was one of the greatest surprises I had had.

After a conference with Colonel E. G. Brackett, Chief of Orthopedic Services in the United States, I was assigned to duty at Fort Des Moines, Iowa. Meantime, I was granted a few days in which to visit my family. For more than a year they had been in California. This visit was a great reward after my two years of foreign service.

My further experiences in the medical hospitals, especially at Fort Des Moines and Camp Dodge, I shall reserve for a later chapter upon "The Effects of the War Upon the Practice of Civilian Surgery."

At any rate it seemed to me that the surgical lessons of the war in France, Great Britain and Italy had been very little felt in this country. In fact, their influence has not been felt very much even now. It is to be hoped, however, that as time goes on, the care of the injured and crippled in the United States will follow the newer lines of orthopedic reconstructive surgery. In regard to these Sir Robert Jones, Colonel Joel E. Goldthwait, Colonel E. G. Bracket, and others, have drawn conclusions, formulated rules, and established principles which rest upon our best previous knowledge and our most valuable war experiences.

BOOK REVIEWS.

Nostrums and Quakery—Articles on the nostrum evil, quakery and allied matters affecting the public health reprinted with or without modifications, from The Journal of the American Medical Association. Volume II, illustrated, 832 pages. Published by the American Medical Association, 535 N. Dearborn St., Chicago, Ill. Price $2.00.

Ten years ago the American Medical Association published the first edition of the first volume of this book. A year later a second, and enlarged edition of the first volume was issued. Since that time The Journal of the American Medical Association has published, week by week, articles on the nostrum evil, quackery and allied matters affecting the public health. All this material been collected and appears in the present volume.

Quackery can never be defended; the "patent medicine" business, however, need not be fundamentally fraudulent. There is a place for home remedies for the self-treatment of simple ailments. Unfortunately, the home remedies of today are, generally speaking, those secret nostrums commonly "patent medicines" and the methods of "patent medicine" promotion make these products a menace to the public health. The average "patent medicine" is so advertised as to frighten well people into the belief that they are sick for no other purpose than that of causing them to purchase the nostrums.

The present volume is a veritable encyclopedia of information on the subject it treats. The book contains nineteen chapters. The titles of some of these are: "Alcohol, Tobacco and Drug Habit Cures," "Consumption Cures," "Cosmetic Nostrums," "Deafness Cures," "Epilepsy Cures," "Female Weakness Cures," "Nostrums for Kidney Disease and Diabetes," "Medical Institutes," "Miscellaneous Nostrums," "Obesity Cures," "Quackery of the Drugless Type" and Tonics, Bitters, Etc."

This partial list of chapters gives but a poor idea of the vast fund of information contained in the book. To make the volume still more valuable it contains an index of twenty-two pages, two colmns to the page, which includes references to every article appearing in the first volume of "Nostrums and Quackery" as well as to all articles in the present volume.

The book is free from stilted or highly technical language. The articles have evidently been written with the idea that the facts they contain belong to the public. In the Preface, it is emphasized that the work which this volume represents is wholly educational in character—not punitive. "The matter that appears in this book has been prepared and written in no spirit of malice and with no object except that of laying before the public certain facts the knowledge of which is essential to a proper conception of community health."

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AN ELKHORN VALLEY NUMBER.

The Elkhorn Valley medical society was organized Dec. 29, 1896, and this number is in commemoration of its twenty-fifth anniversary.

Started with the hope that "the talent of the medical profession within a radius convenient to Norfolk can be organized into a strong and substantial working body, with great resulting benefit to the profession, socially, professionally, and financially", the society from the first enjoyed uninterrupted growth until it became, undoubtedly, the foremost and strongest district medical society in the entire state. The influence for good on the profession of northeastern Nebraska has been immeasurable and its influence has extended over the state. Some of the best men of the state, specialists and general practitioners, have shared in its councils, and given to it their time and talent.

The society owes its origin to Dr. P. H. Salter, Norfolk,and your editor, conjointly, they having called the first meeting.

Dr. Alexander Bear, "the pioneer physician of the Elkhorn Valley," was the first president. Dr. Bear retired from practice at the age of 70, and returned to the scenes of his youth, and is now living in retirement at Richmond, Va., unable fully to enjoy his declining years on account of total loss of vision. Your editor was the first secretary and the third president. Dr. P. H. Salter became the fifth president.

A movement is now on foot to amalgamate this society with the Fourth Councilor District medical society of the N. S. M. A.

The last mid-summer meeting was the best ever held, the attendance was the largest, every essayist on the program was present and every paper was read and discussed. Five of the papers are published in this number. It is therefore a privilege and a pleasure to pay this slight tribute to a society that undoubtedly has made a place for itself in the medical history of the state of Nebraska.

DO IT NOW: ONE YEAR HAS PASSED.

One year has elapsed since the editorial management of the Journal fell upon the present incumbent by the sudden death of his predecessor. He had no special training for the position, neither had he ever dreamed of assuming editorial responsibilities. He has endeavored to the best of his ability, and with many handicaps, one of which is a laborious practice, to measure up to the standard the organized profession may be assumed to expect of their editor. How well he may have succeeded is left to surmise; therefore apropos of nothing in particular, let the muse be invoked:

"If with pleasure you are viewing any work a man is doing,
If you like him, or you love him, tell him now;
Don't withhold your approbation till the parson makes oration,
And he lies with snowy lilies on his brow;
For no matter how you shout it, he won't really care about it;
He won't know how many tear drops you have shed;
If you think some praise is due him, now's the time to slip it to him,
For he cannot read his tombstone when he's dead.

More than fame and more than money, is the comment kind and sunny,
And the hearty warm approval of a friend,
For it gives to life a savor, and it makes you stronger, braver,
And it gives you heart and spirit to the end;
If he earns your praise—bestow it; if you like him let him know it;
Let the words of true encouragement be said;
Do not wait till life it over, and he's underneath the clover,
For he cannot read his tombstone when he's dead."

HIGH FLYING AS A CURE FOR DEAFNESS.

Accompanied by the coming, or the arrival, of any event we find much to read upon the subject. Sometimes it may contain atoms of truth, but many times it must be read with care lest we fall into the tracks of an over enthusiastic writer who is simply putting out something to read. The successful flying of an aeroplane is truly an epoch in history. However, the cure of deafness by an ascent to various altitudes in an aeroplane is apparently accompanied with too much enthusiasm on the part of the various writers who have contributed to the ever anxious public who always read such articles with great wondering.

Ever since people first began to travel we have often times heard of the great benefit derived by some who were unfortunate enough to suffer from difficulty of hearing, should they go to the mountains. Others derived the same benefit by the lower altitudes of the seashore. It must be admitted, a more sudden stimulant is derived from the more sudden change of altitude caused by an ascent in an aeroplane. However, results are the same. The acute stimulant caused to the auditory system by the suddent change in blood pressure may temporarily improve the hearing. These same people would be benefited to the same extent by an equal altitude derived in another mode of travel.

Improvements are very much noticeable in catarrhal conditions. However, it must be continually kept in mind that exceedingly high altitudes or sudden changes of altitude may cause a hemorrhage, thereby resulting in permanent increased impairment. It is possible to permanently improve some affections of the auditory system by changes of altitude. These will be improved by gradual ascents, as a trip to the mountains or by any other treatment that will properly stimulate the capillary circulation to the part and not accompanied with the dangers of so sudden a change as the aeroplane.

—D. D. S.

THE CANCER CAMPAIGN.

The Cancer Campaign began Oct. 31 and ended Nov. 5. There is every reason to regard the campaign as a splendid achievement on the part of the Nebraska medical profession. The cooperation of the doctors in this work was most gratifying to the executive committee. Almost without exception the doctors responded to the call of the committee and gave freely of their time and their talents. The exact extent of the campaign in our state is not known but the returns clearly indicate that fully seventy-five percent of the population of the state was given the opportunity of hearing the message and an equal proportion of the medical profession was privileged to hear scientific discussions on the Cancer Problem. With the exception of the far western portions of the state there were few towns of 500 or more inhabitants where at least one presentation of the subject was not given and even in the far west much was accomplished. The attendance at these meetings ranged from twenty-five to one thousand, the average audience numbering about two hundred. Wherever the message was given it was received with great interest by the lay public. The number of people who heard these messages probably totals 50,000 but indirectly by word of mouth and through the literature which was distributed the message will have been carried to many times this number. In Omaha alone there were about forty public meetings in churches, clubs and the like with an aggregate audience of about 10,000. All this was the direct result of the efforts of the Nebraska medical profession with the splendid cooperation of the American Society for the Control of Cancer as represented by its efficient secretary, Mr. Frank J. Osborne of New York City.

And now that all this has been done certain responsibilities have been assumed by the profession. We have gone before the public with a message—we have told them of the prevalence of cancer; of its frightful ravages. We have told them of the early manifestations of cancer so they may have their suspicions aroused at the onset of the disease and we have urged them to go at once to their family physician at the onset of suspicious symptoms. And having done all this, we have charged ourselves with a responsibility to make good. Ignorance, indifference and procrastination must not stand in the way of giving the needed service when these people come to us to learn whether or not they have cancer. We must give them full satisfaction at whatever cost in time and in scientific research.

The persistent lesions about the mouth and on the surface of the body, the lumps in the breast, the chronic indigestion, the discharges from the uterus, bowel and bladder are not to be regarded lightly but are to be viewed in the light of the message we have carried to the people.

The executive committee want suggestions as to how best to carry on the work. We have learned much in this campaign that will be of future service to the organized work and the work must go on and on to the end that the mortality of cancer will be materially reduced. It is the goal of the national organization to show a decrease of thirty percent in the mortality of cancer in the next ten years—a three percent reduction each of these years.

Assuming that the work of the organization has already contributed to the checking of the progress of the disease through its campaign of education is it not altogether within reason to expect a progressive reduction in the death rate as the years go by? What organized effort has done for tuberculosis and other preventable diseases may it not do for cancer? —P. F.

November 17, 1921.

Dr. Palmer Findley, Omaha, Neb.

Dear Dr. Findley:

Your enthusiastic letter of November 5 relating in outline what was accomplished in the State of Nebraska during the National Cancer Week has been received. To say that this information is received with pleasure is putting it mildly. It is really the type of report which fully compensates the Executive Committee of the Society for all the time and effort which it has put into this most successful national effort.

Many similar reports have been received from other sections of the country but in none of the forty-eight states have the results pointed more definitely to the unselfish devotion and untiring efforts of the members of the medical profession who have been associated with us in this work than that from your state. It is really a service of love born in on the profession by years of fruitless attempts to stay the ravages of this disease, when the great majority of patients came for medical attention long after any human succor could avail. This sad story of neglect and ignorance cannot longer exist in a state where the whole medical fraternity has determined to let in the light of day on this problem and take the whole people into their confidence to the end, that together a real advance in the campaign against cancer may be effected.

I am glad for this opportunity of expressing through you the grateful appreciation of the Society for the wonderful service rendered by the medical men of Nebraska.

Sincerely yours,
F. J. Osborne,
Executive Secretary.
American Society for the Control of Cancer.

THE PRESENT STATUS OF HOSPITALS IN THE UNITED STATES.

A most interesting report on the present status of hospitals in the United States appears in a recent issue of the A. M. A. Bulletin. Nebraskans who are interested in things medical have a right to be encouraged by the favorable comparisons shown in this report when Nebraska is contrasted with other states. The data is gathered from statements made by superintendents, directors, and other executives, either directly or through the state advisory committee appointed by the various state medical associations; and being thus official, they are reliable.

The committees were asked to report in particular upon hospitals requesting internes. In so far as it was possible, they were further asked to report on all hospitals. Of the 2,924 hospitals with more than 25 beds, 483 have been approved for the training of internes. This does not mean that 483 only could provide satisfactory training. Many others could provide this training, but this is the number approved by those requesting internes.

There are approximately 4,000 hospitals reported in the United States, with 300,000 plus beds, or one bed to every 340 persons. Of these, 200,000 plus, or 67 percent, are in use. There is one hospital to every 741 square miles, ranging from one to each 42 square miles in Massachusetts to one to 6,000 miles in Nevada.

Hospital experts estimate that we should have one bed for from 300 to 500 persons, so that our supply seems adequate although our distribution is unequal. Also, the percentage of beds in constant use varies widely, from 76 percent in California to 48 percent in Nevada and Arkansas. The state showing the lowest supply of hospital beds is Mississippi, where there is but one bed for every 1054 people. Nevada, on the other hand, has one bed for every 139 people.

The comparison of hospitals per county is as follows: There are 3027 counties in the forty-eight states. Fifty-six percent of these counties have no hospitals.

The report points out that there are four factors which must be considered together in these statistics to show accurately whether the hospital supply of any state or community is adequate. These factors are (a) the number of square miles to each hospital; (b) the ratio of beds to population; (c) the percentage of beds constantly occupied; and (d) the percentage of counties in the states which are entirely without hospitals. The report then tabulates these statistics in a very comprehensive manner. Those desiring facts and figures will find its detailed study well worth while.

Nebraska has 93 counties, with 44 hospitals of over 25 beds and 25 hospitals under 25 beds, and with 58 counties, or 62 percent, having no hospitals. This is 8 percent more counties without hospital accommodations than the average for the whole country. New Hampshire has a hospital in every county, whereas Georgia has 81.6 percent of counties without hospitals.

In a tabulation of hospital facilities in the fifty larger American cities, Omaha appears with a favorable showing. She has one hospital bed for every 107 people. Of these it is estimated that 70 percent are continuously occupied. Portland (Oregon), Youngstown, Seattle, Hartford, St. Paul, Baltimore, Richmond, Memphis and Boston show better percentages.

This report represents a more complete and accurate survey than any previously made. It also shows a distinct advance in our grasp of the details of the national hospital problem. Other national bodies such as the American College of Surgeons, the National Hospitals Associations, etc., are making similar studies of hospital problems from various angles. All are cooperating to the end that higher standards may be reached and greater efficiency rendered to the public. From many sources it is becoming evident that the laity now recognize the differences between a really efficient hospital and the old-time boarding house for the sick. This is a healthy tendency and should show a constant growth to the end that the standardization of all hospitals permitted to serve the public would carry a guarantee of efficiency. The nearer we approach this condition the safer it will be for a stranger in a strange land to enter any hospital and feel that his physical welfare will be as skillfully guarded there as his money would be if he placed it in the First National Bank of the same city.

As mentioned elsewhere, this report was undertaken primarily to establish suitable interneship standards; but it is much more far-reaching in its effects and possibilities. It should stimulate every hospital, whether of less or more than 25 beds, to attempt an efficient standardization. In Nebraska this has occurred. Numerous requests have come to the committee on Hospital Standardization from hospitals out over the state, and it is perfectly evident that progress has been made. A resurvey will probably be undertaken this year, and then the exact degree of this progress will become better known. —J. S. W.

EDITORIAL PARAGRAPHS.

There has been general complaint from the profession that business is dull, "rotten." It is reported that the surgeons at the larger clinics say it is cut down one-half. Physicians generally, over the state, have felt the lack of business during the summer and fall. Collections are reported to be even worse. There is one thing all of us can do: We can economize. Honestly, are you as badly off as you make yourselves believe you are?

It occurred on the twenty-sixth day of the month. A ten-pound girl baby had been born and the doctor took a seat beside the bed to write up the baby's pedigree as required by the census bureau. "Let's see," said the doctor, "this is the 26th, isn't it?" "Oh, no," said the baby's mother, "it is only the seventh."

The Nebraska physician is not so much concerned about the bite of the Gila monster as he is about that of the rattlesnake; but it is a matter of passing interest to note that recent investigations at the University of Arizona have proven that the Gila monster's bite contrary to a lately held general belief, is actually poisonous. The reptile has well developed poison glands and poison fangs in the lower jaw, but it takes about 9 cc. of the poison to prove lethal in man.

Corn is the basis of Nebraska's wealth; therefore it concerns the Nebraska doctor and the Nebraska State Medical Journal. The newsboy on the train sells apples, two for a quarter; in other words it takes a bushel of corn to buy two apples. Comparisons may be odious, but ———.

CASE REPORT—MALIGNANCY IN A CENTENARIAN.

J. W. Duncan, M. D., Omaha, Neb.

Mrs. M. B. C., aged 100, Irish, was admitted to St. Joseph's Hospital, in Omaha, July 29, 1920, complaining of a growth on the lower lip.

She had been a constant clay pipe smoker since early womanhood. She stated that one month previous to her admission to the hospital she noticed a small excoriation on the lower lip, which bled easily and extended rapidly. There could be no doubt of the patient's mental acuity and her statement of duration of the growth was substantiated by a son, aged 60 years.

Examination revealed an elevated tumor about 1½ centimeters in diameter just to the left of the midline. There was no palpable enlargement of the submental or submaxillary lymph glands. Aside from the growth described there was no evidence of disease involving the mucous membranes. There was a generalized keratosis senilis.

The growth was removed under novocain infiltration anesthesia and X-ray treatment instituted. The adjacent glands were not disturbed.

The pathological report was squamous cell epithelioma.

About seven months later, March 17th, 1921, this patient was readmitted for the removal of a lipoma over the right scapula. The scar at site of the epithelioma was firm, there was no evidence of recurrence and there was no glandular enlargement.

The age of the patient was substantiated by records in her possession, and the case is reported because of the authenticated development of the growth at this period of life which, to my knowledge, is the latest reported appearance of any form of malignancy. (Graves in the British Medical Journal, January 17th, 1920, reports a sarcoma of the breast first noticed in the 98th year).

I wish to make further the unrecorded personal observation, that senile keratoses and tegumentary epitheliomata are very commonly found in persons of Hibernian origin or extraction.

THE SOCIETIES.

The anuual convention of the **Creighton Medical Alumni Association** was held Nov. 3rd, 4th and 5th, at St. Joseph's and Ford Hospitals and at the Fontenelle Hotel. On the program were Drs. F. J. Schleier, F. P. Murphy, B. M. Riley, Jas. Kelly, B. M. Kully, A. F. Tyler, J. Harry Murphy, G. W. Dishong, J. F. Langdon, A. Sachs, W. L. Sucha, M. G. Wohl, B. C. Russum, Karl Connell, M. J. Ford, W. H. Prumer, E. A. Connolly, and A. E. Mack, all Creighton alumni excep Dr. Wohl, who, like most of the others mentioned, is on the Creighton medical faculty.

Each evening an address was delivered by a distinguished guest, at the Fontenelle Hotel. The first was by Dr. Burton E. Simpson, of Buffalo, N. Y.; the second by Dr. Edw. Lyman Cornell of Chicago; and the third by Dr. Willis S. Lemon of Rochester, Minn., who said that a record second to none had been established by the Creighton graduates who make the three-year postgraduate course at the Mayo Clinic at Rochester. He gave high praise to Dr. Louis David Maguire, who has been at Rochester for some years, and said a reason which moved him to attend the convention in Omaha was the desire to see more of the school which was so well represented.

The convention was attended by about 125 alumni, principally from Nebraska, Iowa, South Dakota, and Kansas, and some came from as far as Texas. At the annual banquet, held at the Fontenelle the evening of the first day, the members grouped themselves according to years. The out of town alumni were guests of their Omaha conferees at the Ak-Sar-Ben field Thursday and Friday afternoons, and at the Creighton-St. Louis football game Saturday.

The election of officers for the coming year took place at noon Saturday, and Dr. Lucien Stark, of Hartington, Neb., was elected president; Dr. Frank J. Schleier, of Omaha, vice-president and Dr. Thos. Houlton, Omaha, secretary-treasurer.

The **Richardson County Medical Society** featured a cancer program at a special meeting at the Falls City hospital Nov. 4.

The **Nemaha County Medical Society** gave a cancer program at Auburn, Oct. 27.

The **Northeast Nebraska Medical Society** met at Wayne, Nov. 2, and the program consisted of five papers dealing with cancer.

The **Franklin County Medical Society** at a meeting at Franklin, Nov. 9, had on the program, "Medical Drainage of the Gallbladder," Dr. A. L. Smith, Lincoln; "The Prostate," Dr. C. C. Johnson, Lincoln; "The Present Status of the X-ray Treatment of Malignancy," Dr. Karl Kail, Lincoln; "Treatment and Prevention of Deformities of the Young," Dr. J. E. M. Thomson, Lincoln; and "Cooperation of the Bureau in Public Health Problems," Dr. I. H. Dillon, Lincoln.

The **Seventh Councilor District Medical Society** was organized at Geneva, Oct. 20, with fifty-five doctors present. Dr. H. E. Potter, Councilor, Fairbury, was elected president and Dr. J. Bixby, Geneva, secretary. The Filmore county medical society was host at a complimentary dinner tendered. Papers presented were as follows: "Focal Infections," Dr. G. H. Bentz, Fairfield; "Botulism From Eating Canned Pork," Dr. H. E. Harvey, Fairbury; "Surgical Shock," Dr. Ernst Pfeiffer, Nelson; "Ectopic Pregnancy," Dr. E. A. Bowles, Hebron; "Diagnosis of Gallstones," Dr. H. J. Lehnhoff, Lincoln; "The Roentgenogram in Mastoiditis," Dr. J. Hompes, Lincoln; "The Physiological Problem Involved in the Lyon-Meltzer Method of Biliary Drainage," Dr. A. D. Dunn, Omaha; "The Early Symptoms of Cancer of the Stomach," Dr. B. B. Davis, Omaha.

The **Ninth Councilor District Meeting** was held at Grand Island on Monday, October 24th. At that time Dr. R. D. Brysen, Councilor of the District succeeded in permanently organizing the Ninth Councilor District Medical association. The following officers were elected: President, Dr. A. E. Wanek, Loup City; secretary-treasurer, Dr. R. C. Woodruff, Grand Island. It was decided that the association meet once each year upon call of the president and secretary. The following program was given:

Organization of the Cancer Campaign, Dr. Morris Nielsen, Blair; Cancer of the Uterus,(illustrated with slides), Dr. Palmer Findley, Omaha; Cancer of the Gastrointestinal Tract, Dr. Frank Conlin, Omaha; Some Physiological Problems Involved in the Lyon-Meltzer Method of Biliary Drainage, Dr. A. D. Dunn, Omaha; X-ray Treatment of Epithelioma, Dr.

R. C. Woodruff, Grand Island; Presentation of a New Instrument, Dr. L. M. Stearns, Kearney.

A banquet was served at six o'clock. There were sixty in attendance at this meeting and on all sides unusual interest and energy was displayed.

The **Thayer County Medical Society** held its annual meeting at Hebron, November 3rd. Dr. C. C. Snowden, Davenport, read a paper on, "The Treatment of Pneumonia in Children." The following officers were elected: President, Dr. E. A. Bowles, Hebron; vice president, Dr. P. E. Milbourne, Davenport; secretary-treasurer, Dr. Rudolph F. Decker, Byron. Dr. E. W. Rowe, Lincoln, was present as a guest and after the meeting delivered an address on, "Cancer" at a well attended mass meeting.

At the **Clinical Congress** of the **America College of Surgeons** held in Philadelphia Oct. 24-28, Dr. John B. Deaver, in his presidential address criticized severely the full time college professor, and also questioned the value of radium in the treatment of carcinoma. Dr. Harvey Cushing, Boston, was elected president for the ensuing year and Boston was designated the next place of meeting. Over 700 were admitted to fellowship. The Nebraskans thus honored are: Doctors Charles H. Campbell, Columbus; Wesley L. Curtis, Lincoln; George B. Dent, North Platte; Oscar H. Hahn, Hastings; Samuel R. Hopkins, Hastings; Henry B. Lemere, Omaha; Charles McMartin, Omaha; Frank H. Morrow, Columbus; John R. Nilsson, Omaha; George F. Simanek, Omaha; Chester H. Walters, Omaha; Henry P. Wekesser, Lincoln; W. Eugene Wolcott, Omaha.

The clinics in the various hospitals presented a great variety of excellent material and were invariably crowded. Scientific programs were held each morning and evening at the Bellevue-Stratford Hotel. At the evening sessions each foreign guest presented a paper. Sir Harold Stiles' paper upon "Cervical Rib and Technique of Excision," stood out as a classic. One evening was devoted to a symposium on Sarcoma in Long Bones; Blood-good, Caley and others reported many cases with none too encouraging results. A plea was made that each fellow report each case of sarcoma in long bones in detail, as regards pathology, treatment and result, to a Commission on Sarcoma which is to be named later.

At another evening session the entire program was devoted to the question of the indications for cholesystostomy and cholecystectomy. This was perhaps the most popular evening so far as the general surgeons were concerned.

Partly due to the meeting at Kansas City and partly due to the general monetary depression the representation from the states bordering on the Missouri river was very limited.

The fall meeting of the **Republican Valley and Tenth Councilor District Medical** Association was held in Hastings, Thursday, November 10th. The visitors registered at the Commercial Club, where cars were provided and the doctors driven to Ingleside State hospital, where as the guests of Dr. and Mrs. Fast the program was given. The business session was held in the morning and the following officers were elected for 1922: President, Dr. C. B. Calbreath, Hastings; secretary, Dr. N. T. Johnston, Upland; treasurer, Dr. P. A. Sandbury, Holdrege. The location committee decided on Cambridge for the meeting next May. At the close of the business session the visitors to the number of sixty-five were guests of Dr. and Mrs. Fast at luncheon. After lunch the following program was carried out:

"Syphilis from the Eye, Ear, Nose and Throat Standpoint," Dr. E. C. Foote, Hastings; "Pyloric Stenosis", Dr. C. R. Spicer, Hastings; "Report of a Case of Banti's Diseases", Dr. G. W. Clark, Bertrand; "More Recent Treatment in Diseases of the Biliary Tract", Dr. F. A. Brewster, Beaver City; "A Review of Two Thousand Cases of Obstetrics," Dr. Franklin Schauffleberger, Hastings.

A Clinic was given on some mental cases by Dr. Fast after which a banquet was held in the Clarke Hotel. Dr. Mace acted as toastmaster. There were fifty-five present. After the banquet a public meeting was held in the court house as part of the Cancer Campaign, at which Dr. Palmer Findley of Omaha made a very fine talk, illustrated with lantern slides.

The meeting was one of the best in point of attendance, interest and program that the society had ever held.

It was decided at the meeting to request all county secretaries in the Tenth Councilor District, when collecting the County and State Society dues for 1922 to also collect $1.00 extra from all of these members who desired to belong to the District Society. This extra dollar should be sent to the Councilor, who is also Secretary of the Society, Dr. N. T. Johnston, Upland, Nebraska.

The **Franklin County Medical Society** held its fall meeting in Franklin on Wednesday, Nov. 9th. The meeting was the largest in the history of the society. The following officers were elected for 1922: President, Dr. A. B. Campbell, Franklin; secretary-treasurer, Dr. N. T. Johnston, Upland; delegate, Dr. H. C. Smith, Franklin. The following was the afternoon program: "Breast Tumors", Czar C. Johnson, Lincoln; "Medical Drainage of Gallbladder", A. L. Smith, Lincoln; "Recent Treatment of Cancer by Radiation", K. Kail, Lincoln; "Treatment of Deformities of the Young", J. E. M. Thomsen, Lincoln; "Cooperation of Bureau of Public Health", I. H. Dillon, Lincoln. In the evening, a public meeting was held in the Congregational church as part of the Cancer campaign. The church was filled by a very appreciative audience, who listened to an illustrated lecture on Cancer by Dr. Czar C. Johnson of Lincoln.

At six o'clock Drs. Campbell and Smith of Franklin entertained the society to a banquet at the Lincoln Hotel.

The **Lancaster County Medical Society** on Saturday, Oct. 5, 1921, had as its invited guest Dr. B. H. Orndoff, Roentgenologist of The Francis E. Willard Hospital of Chicago. After the usual dinner Dr. Orndoff spoke on the subject of "Radiation Of The Tissues". He explained the theoretical action of the Roentgen ray and its application in the treatment of certain diseases. During his talk he referred in detail to the work done on mice at the University of Chicago. This work shows that a tendency to cancer is hereditary and can be bred into or out of a line of individuals just the same as other stock characteristics. In other words heredity in cancer follows the rules of the Mendelian Law and it is possible by right breeding to breed cancer out of the race. However, practically, we must treat the condition and it is best done by surgery and X-ray combined.

The meeting was attended by a number of doctors from neighboring towns. On Sunday Dr. Orndoff spoke before a large open meeting at Saint Paul's Methodist church.

HOSPITAL NOTES.

The Long Pine hospital has been closed.

The campaign for funds to build the proposed Methodist hospital at Scottsbluff is now on.

Dr. J. R. Taylor, Sidney, has opened a small private hospital.

The federal court in the case involving a bequest of upward of fifteen thousand dollars by the late James Connery, to St. Vincent's hospital, Newcastle, has decided in favor of the hospital.

Owing to the illness since midsummer, of Dr. H. A. Skelton, owner and surgeon in charge, the Spencer hospital was closed recently.

The new Evans hospital, Columbus, was opened Nov. 10. It is a fireproof building with accommodations for sixty patients, with one small ward, has sun parlor, maternity department, X-ray and violet ray outfits, a dental and oral surgery department, and all the paraphernalia that goes to make a real modern hospital. An isolation ward is provided separate from the main building. A bungalow has been built for a nurses' home. The hospital represents an investment of over $200,000, and is the creation largely of Dr. C. D. Evans, Sr., and his two sons.

The Lutheran hospital, York, must pay $2,000.00 damages to D. D. Malcomb in a case growing out of a partially paralyzed arm following an operation. A hypodermic injection given by a nurse just previous to the operation is blamed for the resulting paralysis.

NOTES ABOUT THE DOCTOR

Dr. C. L. Davidson, recently of Springview, has located at Hoskins.

Dr. A. O. Carmack, for eleven years the physician at Center, has moved to Colome, S. D.

Dr. F. W. Shank, formerly of Lincoln has located at Oxford, succeeding Dr. E. E. Cone.

Dr. M. C. Hurd, Hemingford, has returned from the east where he had been doing post-graduate work.

The Supreme Court has decided adversly in the case of Dr. Leslie S. Fields of Omaha, convicted of committing an abortion.

Dr. A. C. Stokes, Omaha, was elected a vice-president of the American Association of Railway Surgeons at the recent meeting in Chicago.

Drs. T. J. Lawson and S. M. Weyer, Long Pine, have dissolved partnership. It is understood that Dr. Lawson has entirely retired from practice.

A new doctor at Grand Island is Dr. Irvin Kinenstein, recently an interne at Wise memorial hospital, Omaha. He will be associated with Dr. E. A. Watson.

Dr. E. E. Cone, for 29 years a practitioner at Oxford, has moved to Pueblo, Colo., and has assumed the superintendency of Clark's Mineral Springs Sanitairum.

Dr. Carl Kelsey, a professor in the University of Pennsylvania, was a recent visitor at the home of Dr. H. W. Benson, Oakland, while enroute to Calif., to visit his mother.

Dr. C. M. Swab, who recently gave up general practice at Union, to prepare himself for OALR in Philadelphia, has been succeeded by Dr. Edward S. Furay, formerly of Omaha.

Dr. R. T. Woodyatt, assistant professor of medicine, Rush Medical college, gave a lecture before the Omaha-Douglas county medical society Nov. 8, on recent advances in the study and treatment of diabetes mellitus.

Dr. and Mrs. J. A. Henske, Omaha, spent a few days during November in St. Louis visiting relatives, in Cleveland attending the Central States Pediatric Society, and in Chicago visiting the Children's Clinics.

HYMENAL.

Dr. W. T. Wildhaber and Miss Louise Beatrice Stoll, both of Beatrice were married October 20.

Dr. J. W. Mounsey, Spokane, Washington and Miss Elizabeth Crowley of Rockford, Washington were married October 15. Dr. Mounsey is a native of Newcastle, Neb., and a Creighton medical alumnus.

NECROLOGICAL.

Dr. D. S. Palmer, Eclectic medical college, Cincinnati, '09, for many years at Holdrege, and pioneer of Phelps county, died Oct. 25, of diabetes from which he had suffered for some years.

Dr. William F. Conwell, Chicago medical college, 1870, and Bellevue medical college 1886, for upward of forty years in practice in Antelope county, died at Neligh, Nov. 9, from an organic heart lesion, age 75. Dr. Conwell was a native of Indiana and a veteran of the civil war. He had been one of the really active medical men in the Elkhorn valley, had taken an active part in medical organization work, and only last July he had attended and taken part in the discussions of the midsummer meeting of the Elkhorn Valley medical society.

Dr. J. R. Purdum, Wetmore, Kans., a native of Seward, Neb., graduate Lincoln medical college, '94, died the middle of November after a short illness, aged 64.

Dr. Pierre C. Morey (formerly Moriarty), Omaha, New York Homeopathic Medical College, '88, an eye, ear, nose and throat specialist in Omaha for many years, died Nov. 9, following an operation, aged about fifty-five years.

Dr. Robert J. McArthur, South Sioux City, Sioux City College of Medicine, '01, a widely known physician, accidentally shot himself Nov. 15, while hunting and died almost instantly.

THE NEBRASKA STATE MEDICAL JOURNAL

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Next Annual Meeting, Lincoln, May 9-12, 1921.

Vol. VI. Norfolk, Nebraska, January, 1921. No. 1

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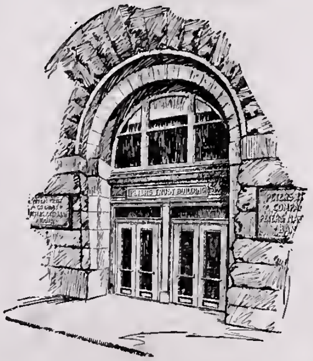

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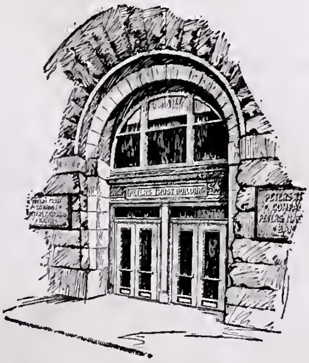

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Men's Segregation Cottage showing Solarium

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Pergola connecting North Wing with Administration Building

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the serene beauty of God's out-doors are
every day joys out here.

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ELKHORN VALLEY NUMBER

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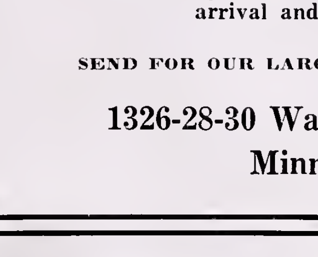

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